Lake Skinner Regional Water Transmission System Project

Draft Program Environmental Impact Report - Appendices

SCH No. 2022070445

Prepared for:

Eastern Municipal Water District

2270 Trumble Road

Perris, CA 92570

Prepared By:

HELIX Environmental Planning

7578 El Cajon Boulevard

La Mesa, CA, 91942

August 2026

Appendix A

Notice of Preparation and Comments

Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, CA 92572-8300

Notice of Preparation

Date:	**July 25, 2022**
To:	**State Clearinghouse; Responsible and Trustee Agencies; and Other Interested Parties**
Subject:	**Notice of Preparation of an Environmental Impact Report**
Project:	**EM-11 Transmission Pipeline and Pump Station Project**
Lead Agency:	**Eastern Municipal Water District**

Eastern Municipal Water District (District) intends to prepare an Environmental Impact Report (EIR) for the proposed EM-11 Transmission Pipeline and Pump Station Project (Project). The District is serving as Lead Agency pursuant to the California Environmental Quality Act (CEQA). The District invites written comments on the scope of the environmental analysis and identification of potential environmental issues to be included in the EIR.

Notice of Preparation: This Notice of Preparation (NOP) has been sent to the Office of Planning and Research, Responsible and Trustee agencies, organizations, and interested parties. The purpose of the NOP is to inform recipients that the District is beginning preparation of an EIR and to solicit information that will be helpful in the environmental review process. This notice includes information on how to provide comments to the District and a description of the Project.

Comments: The District is requesting input from CEQA Responsible and Trustee agencies, other public agencies with jurisdiction by law over resources potentially affected by the proposed Project, and public input regarding the scope and content of environmental information to be included in the EIR. Agency responses should identify the issues to be considered in the EIR, including significant environmental issues, alternatives, mitigation measures, and whether the responding agency will be a responsible or trustee agency, and the basis for that determination. Due to the limits mandated by State law, your response must be sent at the earliest possible date but postmarked within 30 days from receipt of this notice, or no later than August 23, 2022. Please send your comments to:

Eastern Municipal Water District
Attn: Joseph Broadhead
2270 Trumble Road
Perris, CA 92570

Location of the Proposed Project: The proposed Project would be located within unincorporated areas of unincorporated Riverside County (Figure 1, Regional Vicinity, and Figure 2, Project Alignment). The EM-11 transmission pipeline would extend in a north-northwest direction approximately 10-12 miles through the southern Perris Valley area. The proposed pump station and service connection are near to the intersection of Auld Road and Washington Street.

Overview of the Proposed Project: The District is proposing the EM-11 Project to assist in expansion of its treated water supply portfolio to meet demands resulting from long-term projected growth. The Project includes three main components: (1) a new service connection (also referred to as a turnout) to receive treated water deliveries from The Metropolitan District of California (Metropolitan) Robert A. Skinner Water Treatment Plant (WTP); (2) a new pump station that would connect to the turnout to supply water to the District's service area; and (3) a new transmission pipeline. Collectively, these components are known as the EM-11 Project.

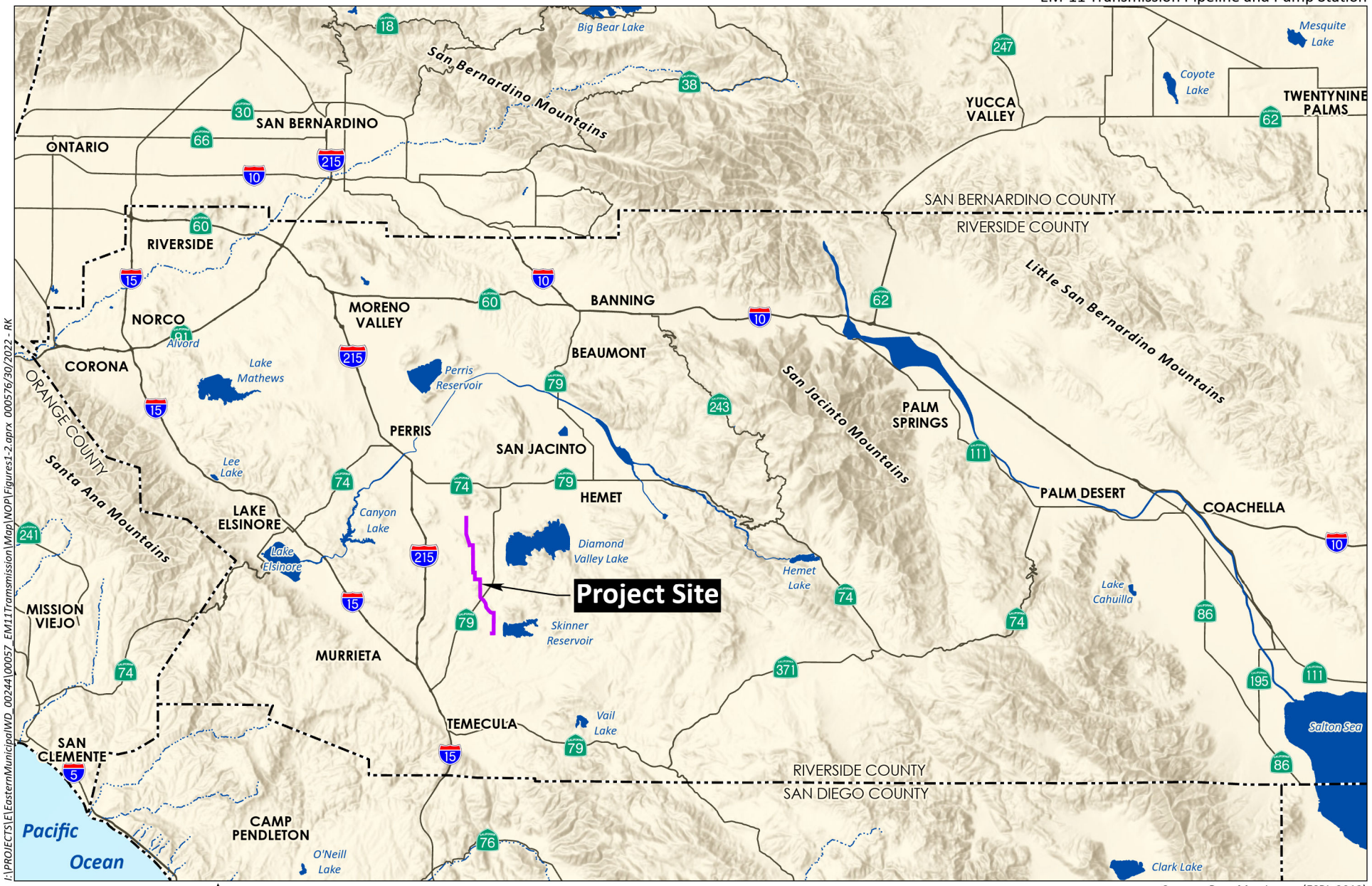
The Project would be constructed in phases. The first phase, which would be online by 2030, includes construction of the pump station with a capacity of 40 cubic feet per second (cfs), the turnout facility, and the 72-inch diameter pipeline segment from the turnout to Scott Road (approximately 4.9 miles long). The second phase includes extending the transmission line by 2.9 miles to Holland Road with a 66-inch diameter pipeline. The third phase, which would be operational in 2040, extends the line 2.1 miles to Simpson Road with a 54-inch pipeline. Future improvements include increasing the flow of the pump station to 80 cfs in 2045 and 140 cfs at full buildout.

Potential Environmental Effects of the Proposed Project: In accordance with Section 15126 of the CEQA Guidelines, the EIR will assess the physical changes to the environment that would likely result from the construction and operation of the Project, including direct, indirect, and cumulative impacts and growth-inducing impacts. The EIR will provide an assessment of impacts for facilities and activities associated with Project implementation (CEQA Guidelines Section 15161). The analysis in the EIR will be programmatic in nature due to the phasing of the Project and the availability of Project-specific details.

The District has determined that the proposed Project may have the potential to significantly impact air quality, biological resources, cultural resources and tribal cultural resources, energy, geology and soils, greenhouse gas emissions, hydrology and water quality, and noise. These issue areas will be evaluated in detail in the Draft EIR. It is anticipated that all other issue areas will be discussed in the *Environmental Effects Found Not to be Significant* section of the Draft EIR. The EIR will identify mitigation measures if necessary and feasible to reduce potentially significant impacts of the proposed Project. The EIR will also discuss alternatives to the proposed Project, including the CEQA-required "No Project" alternative.

Attachments:

Figure 1: Regional Vicinity
Figure 2: Project Location



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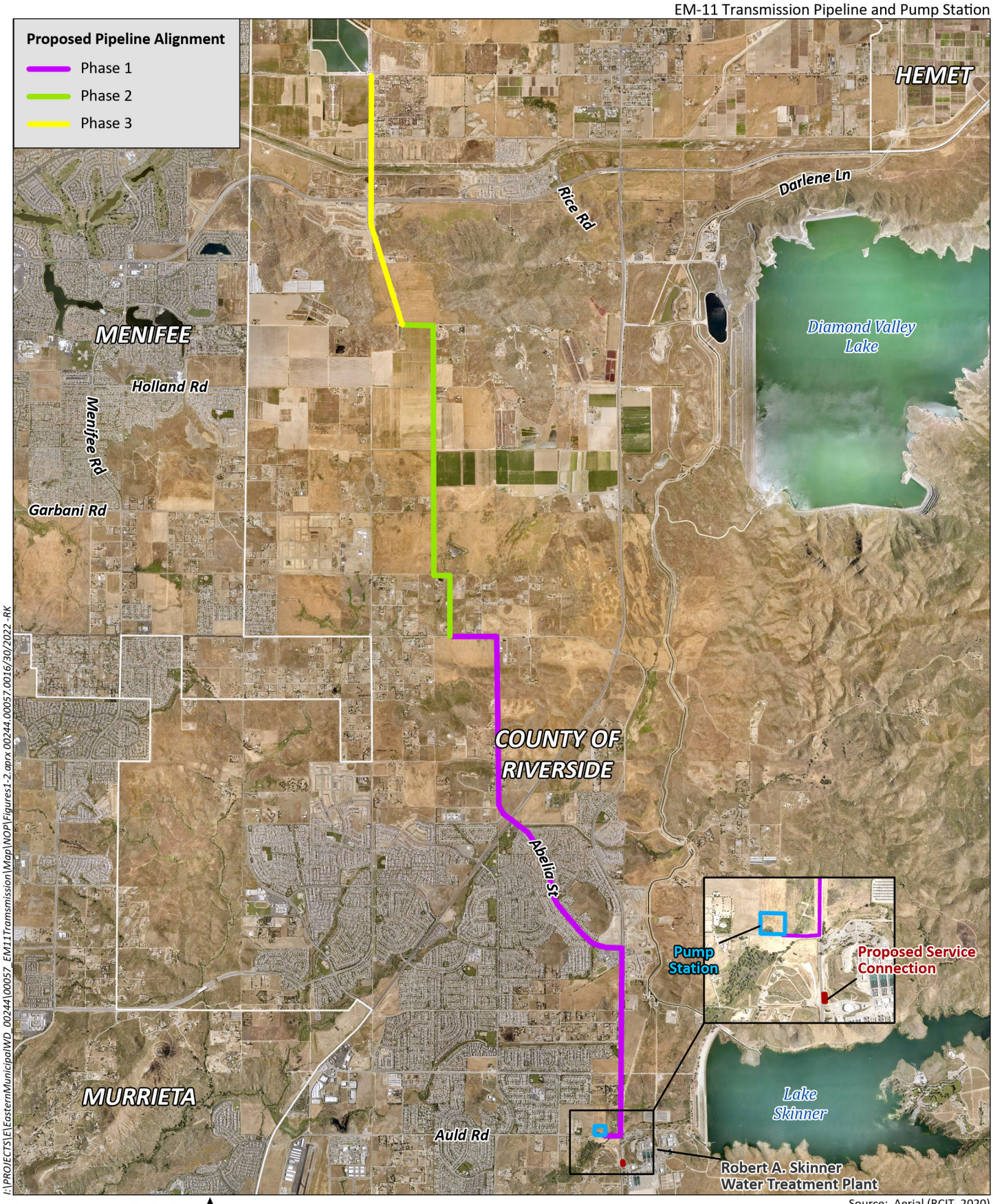
Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Vicinity

Figure 1

EM-11 Transmission Pipeline and Pump Station



0 5,600 Feet

Source: Aerial (RCIT, 2020)

HELIX Environmental Planning

Project Location

Figure 2

EM-11 Transmission Pipeline and Pump Station Project

Summary

SCH Number	2022070445
Lead Agency	Eastern Municipal Water District (EMWD)
Document Title	EM-11 Transmission Pipeline and Pump Station Project
Document Type	NOP - Notice of Preparation of a Draft EIR
Received	7/25/2022
Present Land Use	Various - multi-mile pipeline
Document Description	The Project includes three main components: (1) a new service connection (also referred to as a turnout) to receive treated water deliveries from The Metropolitan District of California (Metropolitan) Robert A. Skinner Water Treatment Plant (WTP); (2) a new pump station that would connect to the turnout to supply water to the District's service area; and (3) a new transmission pipeline. The Project would be constructed in phases. The first phase, which would be online by 2030, includes construction of the pump station with a capacity of 40 cubic feet per second (cfs), the turnout facility, and the 72-inch diameter pipeline segment from the turnout to Scott Road (approximately 4.9 miles long). The second phase includes extending the transmission line by 2.9 miles to Holland Road with a 66-inch diameter pipeline. The third phase, which would be operational in 2040, extends the line 2.1 miles to Simpson Road with a 54-inch pipeline. Future improvements include increasing the flow of the pump station to 80 cfs in 2045 and 140 cfs at full buildout.

Contact Information

Name	Joe Broadhead
Agency Name	EMWD
Job Title	Principal Water Resources Specialist - CEQA/NEPA
Contact Types	Lead/Public Agency / Project Applicant
Address	2270 Trumble Road PO Box 8300 Perris, CA 92572
Phone	(951) 928-3777 ext. 4545
Email	broadhej@emwd.org

Location

Counties	Riverside
Regions	Countywide
Cross Streets	Auld Road/Borel Road
Zip	92596
Parcel #	Various - Pipeline Project
State Highways	CA-79
Railways	N/A
Airports	N/A
Schools	Numerous
Waterways	Lake Skinner

Notice of Completion

State Review Period Start	7/25/2022
State Review Period End	8/23/2022
State Reviewing Agencies	California Air Resources Board (ARB), California Department of Fish and Wildlife, Inland Deserts Region 6 (CDFW), California Department of Parks and Recreation, California Department of Transportation, District 8 (DOT), California Department of Water Resources (DWR), California Highway Patrol (CHP), California Native American Heritage Commission (NAHC), California Natural Resources Agency, California Regional Water Quality Control Board, Santa Ana Region 8 (RWQCB), California State Lands Commission (SLC), Department of Toxic Substances Control, Office of Historic Preservation, State Water Resources Control Board, Division of Drinking Water, State Water Resources Control Board, Division of Water Quality, State Water Resources Control Board, Divison of Financial Assistance
Development Types	Water Facilities (Transmission pipeline and pump station)(Type Water, MGD 90)
Local Actions	Encroachment Permits
Project Issues	Air Quality, Biological Resources, Cultural Resources, Cumulative Effects, Drainage/Absorption, Energy, Geology/Soils, Greenhouse Gas Emissions, Growth Inducement, Hydrology/Water Quality, Noise, Transportation, Tribal Cultural Resources, Utilities/Service Systems, Vegetation, Wetland/Riparian

Attachments

Draft Environmental Document [Draft IS, NOI_NOA_Public notices, OPR Summary Form, Appx,]	NOP - EM-11 Project PDF 3370 K

Notice of Completion
[NOC] Transmittal form

EM-11 NOC_print signed PDF 319 K

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EDUCATION

Corpse flower blooms for first time at UC Riverside

By Allyson Vergara
avergara@scng.com



PHOTO BY MILKA SOKO

Guests at the UC Riverside Botanic Garden on Sunday look at the corpse flower that bloomed overnight. It's the first time the flower has bloomed at UC Riverside.

"Little Miss Stinky," the corpse flower on display at the UC Riverside Botanic Gardens, has bloomed.

At least 1,500 people — a couple wearing homemade "Little Miss Stinky" shirts — lined up outside the botanic gardens' greenhouse Sunday to see the Amorphophallus titanum, the rare corpse plant, in bloom.

The corpse plant started to unfurl its burgundy bracts — protective leaves around the flowering stalk — late Saturday night.

The university had a live-stream to watch the action.

The endangered tropical flower blooms only once every seven to nine years, sometimes as long as a decade. It only stays in full bloom for 24 to 40 hours, so Sunday was peak bloom.

Officials from the UCR College of Natural and Agricultural Sciences were excited a rare, stinky plant drew large crowds to the gardens, which are typically empty during this time of year.

It was the first time the plant has bloomed in full since the university got its seeds in 2007 from the Huntington Library, Art Museum and Botanical Gardens — which has its own corpse plant.

Corpse plants can grow up to 8 feet tall, and are native to Sumatra, Indonesia, where only 1,000 are believed to be in the wild. The endangered plants are pollinated by carrion flies and dung beetles — hence their pungent smell — "similar to rotting meat when in full bloom," according to a news release from UCR.

"Little Miss Stinky" is stored in a temperature-controlled greenhouse, along with two smaller corpse flowers, which are still growing.

UCR English literature students Tara Dyvas, Chelsea Keane and Amy Juarez came to the gardens Saturday and Sunday. The students said they were aware of the Huntington Library's corpse plant — which staff affectionately called "Stankosaurus Rex" — and always wanted to see one for themselves.

"It's hard to get all the way over there on the literal day it blooms, so on the literal day it blooms, which is only 12 hours," said Dyvas. "So when this one bloomed it was like, 'we gotta go.'"

"It smelled like Brussels sprouts ... I was surprised at how big it was," Chelsea Keane said. "That was the coolest part; like this plant simulates animal flesh in color, smell and heat, all these different multi-sensory ways."

Janine Almanzor, a curator at the gardens, came to the campus early Sunday to see — and smell — the rare plant. She stayed in the greenhouse all day to answer the crowd's many curious questions. Almanzor said the rare plant drew visitors from other cities and counties, including a couple originally from Indonesia who wanted to see their native plant for the first time.

"It's remarkable. People didn't know the UCR botanic gardens was here," said Almanzor. "But here's an oasis in the middle of city that people can come to. We're hoping this will increase our membership, and turn this greenhouse into a full conservatory that's open to the public."

To view the corpse plant:

The UCR Botanic Gardens is open Sundays through Fridays, from 8 a.m. to 2 p.m., but the gardens staff will extend corpse-flower viewing hours until 4 p.m. The plant will be under close supervision and staff members will be inside the greenhouse to answer questions.

Admission is a suggested donation of $5, which will support the gardens and conservatory.

Visitors should park in metered parking in UCR's BG Lot, Lot 10 and Lot 13 Blue.

UCR campus, at 1 Botanic Gardens Drive.

Information: gardens.ucr.edu

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Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, CA 92572-8300

emwd EASTERN MUNICIPAL WATER DISTRICT

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT EM-11 TRANSMISSION PIPELINE AND PUMP STATION PROJECT

Eastern Municipal Water District (District) intends to prepare an Environmental Impact Report (EIR) for the proposed EM-11 Transmission Pipeline and Pump Station Project (Project). The District is serving as Lead Agency pursuant to the California Environmental Quality Act (CEQA). The District invites written comments on the scope of the environmental analysis and identification of potential environmental issues to be included in the EIR.

Notice of Preparation: This Notice of Preparation (NOP) has been sent to the Office of Planning and Research, Responsible and Trustee agencies, organizations, and interested parties. The purpose of the NOP is to inform recipients that the District is beginning preparation of an EIR and to solicit information that will be helpful in the environmental review process. This notice includes information on how to provide comments to the District and a description of the Project.

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Project Location: The proposed Project would be located within unincorporated areas of unincorporated Riverside County. The EM-11 transmission pipeline would extend in a north-northwest direction approximately 10-12 miles through the southern Perris Valley area. The proposed pump station and service connection are near to the intersection of Auld Road and Washington Street.

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The Project would be constructed in phases. The first phase, which would be online by 2030, includes construction of the pump station with a capacity of 40 cubic feet per second (cfs), the turnout facility, and the 72-inch diameter pipeline segment from the turnout to Scott Road (approximately 4.9 miles long). The second phase includes extending the transmission line by 2.9 miles to Holland Road with a 66-inch diameter pipeline. The third phase, which would be operational in 2040, extends the line 2.1 miles to Simpson Road with a 54-inch pipeline. Future improvements include increasing the flow of the pump station to 80 cfs in 2045 and 140 cfs at full buildout.

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Boulevard, Suite C-220
Ontario, CA 91764
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

Governor's Office of Planning & Research

Aug 18 2022

STATE CLEARINGHOUSE

August 18, 2022
Sent via email

Joe Broadhead
Principal Water Resources Specialist
Eastern Municipal Water District
2270 Trumble Road, PO Box 8300
Perris, CA 92572

Notice of Preparation of a Draft Environmental Impact Report
EM-11 Transmission Pipeline and Pump Station Project
State Clearinghouse No. 2022070445

Dear Mr. Broadhead:

The California Department of Fish and Wildlife (CDFW) received a Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) from the Eastern Municipal Water District (EMWD) for the EM-11 Transmission Pipeline and Pump Station Project (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

CDFW is also submitting comments as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT LOCATION

The proposed Project is located within unincorporated areas of Riverside County. The EM-11 transmission pipeline would extend in a north-northwest direction approximately 10-12 miles through the southern Perris Valley area. The proposed pump station and service connection are near to the intersection of Auld Road and Washington Street.

PROJECT DESCRIPTION SUMMARY

Specific details of the proposed Project include (as displayed on Exhibit 1 of the NOP):

1. The EM-11 Transmission Pipeline and Pump Station Project for the following:

    - Establish a new service connection (also referred to as a turnout) to receive treated water deliveries from The Metropolitan District of California (Metropolitan) Robert A. Skinner Water Treatment Plant (WTP).

    - Create a new pump station that would connect to the turnout to supply water to the Metropolitan's service area.

    - Create a new transmission pipeline.

2. The Project would be constructed in phases:

    - The first phase includes construction of the pump station would have a capacity of 40 cubic feet per second (cfs), the turnout facility, and the 72-inch diameter pipeline segment from the turnout to Scott Road (approximately 4.9 miles long).

    - The second phase includes extension of the transmission line by 2.9 miles to Holland Road with a 66-inch diameter pipeline.

    - The third phase extends the line 2.1 miles to Simpson Road with a 54-inch pipeline.

3. Future improvements include increasing the flow of the pump station to 90 cfs and 140 cfs at full buildout.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the EMWD in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. The comments and recommendations are also offered to enable the CDFW to adequately review and comment on the proposed Project with respect to the Project's consistency with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

CDFW recommends that the forthcoming DEIR address the following:

Assessment of Biological Resources

Section 15125(c) of the CEQA Guidelines states that knowledge of the regional setting of a project is critical to the assessment of environmental impacts and that special emphasis should be placed on environmental resources that are rare or unique to the region. To enable CDFW staff to adequately review and comment on the Project, the DEIR should include a complete assessment of the flora and fauna within and adjacent to the Project footprint, with particular emphasis on identifying rare, threatened, endangered, and other sensitive species and their associated habitats.

CDFW recommends that the DEIR specifically include:

1. An assessment of the various habitat types located within the Project footprint, and a map that identifies the location of each habitat type. CDFW recommends that floristic, alliance- and/or association-based mapping and assessment be completed following *The Manual of California Vegetation*, second edition (Sawyer et al. 2009[2]). Adjoining habitat areas should also be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions.

2. A general biological inventory of the fish, amphibian, reptile, bird, and mammal species that are present or have the potential to be present within each habitat type onsite and within adjacent areas that could be affected by the Project. CDFW's California Natural Diversity Database (CNDDB) in Sacramento should be contacted

[2] Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A manual of California Vegetation, 2nd ed. California Native Plant Society Press, Sacramento, California. http://vegetation.cnps.org/

at (916) 322-2493 or CNDDB@wildlife.ca.gov or https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data 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, in the vicinity of the proposed Project.

CDFW's CNDDB is not exhaustive in terms of the data it houses, nor is it an absence database. CDFW recommends that it be used as a starting point in gathering information about the *potential presence* of species within the general area of the Project site.

3. A complete, *recent* inventory of rare, threatened, endangered, and other sensitive species located within the Project footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish & G. Code, § 3511). Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific/MSHCP surveys, completed by a qualified biologist and 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 CDFW and the U.S. Fish and Wildlife Service, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.

4. A thorough, recent, floristic-based assessment of special status plants and natural communities, following CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018[3]).

5. Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region (CEQA Guidelines § 15125[c]).

6. A full accounting of all open space and mitigation/conservation lands within and adjacent to the Project.

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3 CDFW, 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities, State of California, California Natural Resources Agency, Department of Fish and Wildlife: March 20, 2018 (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline)

Analysis of Direct, Indirect, and Cumulative Impacts to Biological Resources

The DEIR should provide a thorough discussion of the direct, indirect, and cumulative impacts expected to adversely affect biological resources as a result of the Project. To ensure that Project impacts to biological resources are fully analyzed, the following information should be included in the DEIR:

1. A discussion of potential impacts from lighting, noise, human activity (e.g., recreation), defensible space, and wildlife-human interactions created by zoning of development projects or other project activities adjacent to natural areas, exotic and/or invasive species, and drainage. The latter subject should address Project-related changes on drainage patterns and water quality within, upstream, and downstream of the Project site, including: 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.

2. A discussion of potential indirect Project impacts on biological resources, including resources in areas adjacent to the Project footprint, such as nearby public lands (e.g., National Forests, State Parks, etc.), open space, adjacent natural habitats, riparian ecosystems, wildlife corridors, and any designated and/or proposed reserve or mitigation lands (e.g., preserved lands associated with a Natural Community Conservation Plan, or other conserved lands).

3. An evaluation of impacts to on-site and adjacent open space lands from both the construction of the Project and any long-term operational and maintenance needs.

4. A cumulative effects analysis developed as described under CEQA Guidelines section 15130. The DEIR should analyze the cumulative effects of the plan's land use designations, policies, and programs on the environment. Please include all potential direct and indirect Project related impacts to riparian areas, wetlands, vernal pools, alluvial fan habitats, wildlife corridors or wildlife movement areas, aquatic habitats, sensitive species and other sensitive habitats, open lands, open space, and adjacent natural habitats in the cumulative effects analysis. 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.

Alternatives Analysis

CDFW recommends the DEIR describe and analyze a range of reasonable alternatives to the Project that are potentially feasible, would "feasibly attain most of the basic objectives of the Project," and would avoid or substantially lessen any of the Project's significant effects (CEQA Guidelines § 15126.6[a]). The alternatives analysis should also evaluate a "no project" alternative (CEQA Guidelines § 15126.6[e]).

Mitigation Measures for Project Impacts to Biological Resources

The DEIR should identify mitigation measures and alternatives that are appropriate and adequate to avoid or minimize potential impacts, to the extent feasible. The EMWD should assess all direct, indirect, and cumulative impacts that are expected to occur as a result of the implementation of the Project and its long-term operation and maintenance. When proposing measures to avoid, minimize, or mitigate impacts, CDFW recommends consideration of the following:

1. *Fully Protected Species*: Fully protected species may not be taken or possessed at any time. Project activities described in the DEIR should be designed to completely avoid any fully protected species that have the potential to be present within or adjacent to the Project area. CDFW also recommends that the DEIR fully analyze potential adverse impacts to fully protected species due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. CDFW recommends that the Lead Agency include in the analysis how appropriate avoidance, minimization, and mitigation measures will reduce indirect impacts to fully protected species.

2. *Sensitive Plant Communities*: CDFW considers sensitive plant communities to be imperiled habitats having both local and regional significance. Plant communities, alliances, and associations with a statewide ranking of S-1, S-2, S-3, and S-4 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by querying the CNDDB and are included in *The Manual of California Vegetation* (Sawyer et al. 2009). The DEIR should include measures to fully avoid and otherwise protect sensitive plant communities from Project-related direct and indirect impacts.

3. *California Species of Special Concern* (CSSC): CSSC status applies to animals generally not listed under the federal Endangered Species Act or the CESA, but which nonetheless are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. CSSCs should be considered during the environmental review process. CSSC that have the potential or have been documented to occur within or adjacent to the Project area, including, but not limited to: burrowing owl, northern harrier, loggerhead shrike, yellow warbler, and western spadefoot.

4. *Mitigation*: CDFW considers adverse Project-related impacts to sensitive species and habitats to be significant to both local and regional ecosystems, and the DEIR should include mitigation measures for adverse Project-related impacts to these resources. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, onsite habitat restoration and/or enhancement, and preservation should be evaluated and discussed in detail. Where habitat preservation is not available onsite, offsite land acquisition, management, and preservation should be evaluated and discussed in detail.

   The DEIR should include measures to perpetually protect the targeted habitat values within mitigation areas from direct and indirect adverse impacts in order to meet

mitigation objectives to offset Project-induced qualitative and quantitative losses of biological values. Specific issues that should be addressed include restrictions on access, proposed land dedications, long-term monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

If sensitive species and/or their habitat may be impacted from the Project, CDFW recommends the inclusion of specific mitigation in the DEIR. CEQA Guidelines section 15126.4, subdivision (a)(1)(8) states that formulation of feasible mitigation measures should not be deferred until some future date. The Court of Appeal in *San Joaquin Raptor Rescue Center* v. *County* of *Merced* (2007) 149 Cal.App.4th 645 struck down mitigation measures which required formulating management plans developed in consultation with State and Federal wildlife agencies after Project approval. Courts have also repeatedly not supported conclusions that impacts are mitigable when essential studies, and therefore impact assessments, are incomplete *(Sundstrom* v. *County* of *Mendocino* (1988) 202 Cal. App. 3d. 296; *Gentry* v. *City* of *Murrieta (1995)* 36 Cal. App. 4th 1359; *Endangered Habitat League, Inc.* v. *County* of *Orange* (2005) 131 Cal. App. 4th 777).

CDFW recommends that the DEIR specify mitigation that is roughly proportional to the level of impacts, in accordance with the provisions of CEQA (CEQA Guidelines, §§ 15126.4(a)(4)(B), 15064, 15065, and 16355). The mitigation should provide long-term conservation value for the suite of species and habitat being impacted by the Project. Furthermore, in order for mitigation measures to be effective, they need to be specific, enforceable, and feasible actions that will improve environmental conditions.

5. *Habitat Revegetation/Restoration Plans*: Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant restoration techniques. Plans should identify the assumptions used to develop the proposed restoration strategy. Each plan should include, at a minimum: (a) the location of restoration sites and assessment of appropriate reference sites; (b) the plant species to be used, sources of local propagules, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) a local seed and cuttings and 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. Monitoring of restoration areas should extend across a sufficient time frame to ensure that the new habitat is established, self-sustaining, and capable of surviving drought.

   CDFW recommends that local onsite propagules from the Project area and nearby vicinity be collected and used for restoration purposes. Onsite seed collection should be initiated in advance of Project impacts in order to accumulate sufficient propagule material for subsequent use in future years. Onsite vegetation mapping at the alliance and/or association level should be used to develop appropriate restoration goals and local plant palettes. Reference areas should be identified to help guide restoration

efforts. Specific restoration plans should be developed for various project components as appropriate.

Restoration objectives should include protecting special habitat elements or re-creating them in areas affected by the Project; examples could include retention of woody material, logs, snags, rocks, and brush piles.

6. *Nesting Birds and Migratory Bird Treaty Act:* Please note that it is the Project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Fish and Game Code sections 3503, 3503.5, and 3513 afford protective measures as follows: Fish and Game Code section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and Game Code section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act.

   CDFW recommends that the DEIR include the results of avian surveys, as well as specific avoidance and minimization measures to ensure that impacts to nesting birds do not occur. Project-specific avoidance and minimization measures may include, but not be limited to: Project phasing and timing, monitoring of Project-related noise (where applicable), sound walls, and buffers, where appropriate. The DEIR should also include specific avoidance and minimization measures that will be implemented should a nest be located within the Project site. If pre-construction surveys are proposed in the DEIR, the CDFW recommends that they be required no more than three (3) days prior to vegetation clearing or ground disturbance activities, as instances of nesting could be missed if surveys are conducted sooner.

7. *Moving out of Harm's Way:* To avoid direct mortality, CDFW recommends that the lead agency condition the DEIR to require that a CDFW-approved qualified biologist be retained to be onsite prior to and during all ground- and habitat-disturbing activities to move out of harm's way special status species or other wildlife of low or limited mobility that would otherwise be injured or killed from Project-related activities. Movement of wildlife out of harm's way should be limited to only those individuals that would otherwise by injured or killed, and individuals should be moved only as far a necessary to ensure their safety (i.e., CDFW does not recommend relocation to other areas). Furthermore, it should be noted that the temporary relocation of onsite wildlife does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss.

8. *Translocation of Species*: CDFW generally does not support the use of relocation,

salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species as studies have shown that these efforts are experimental in nature and largely unsuccessful.

California Endangered Species Act

CDFW is responsible for ensuring appropriate conservation of fish and wildlife resources including threatened, endangered, and/or candidate plant and animal species, pursuant to CESA. CDFW recommends that a CESA Incidental Take Permit (ITP) be obtained if the Project has the potential to result in "take" (California Fish and Game Code Section 86 defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") of State-listed CESA species, either through construction or over the life of the Project. It is the policy of CESA to conserve, protect, enhance, and restore State-listed CESA species and their habitats.

CDFW encourages early consultation, as significant modification to the proposed Project and avoidance, minimization, and mitigation measures may be necessary to obtain a CESA ITP. The California Fish and Game Code requires that CDFW comply with CEQA for issuance of a CESA ITP. CDFW therefore recommends that the DEIR addresses all Project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of CESA.

Western Riverside County Multiple Species Habitat Conservation Plan

CDFW issued Natural Community Conservation Plan Approval and Take Authorization for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) per Section 2800, et seq., of the California Fish and Game Code on June 22, 2004. The MSHCP establishes a multiple species conservation program to minimize and mitigate habitat loss and provides for the incidental take of covered species in association with activities covered under the permit.

Compliance with approved habitat plans, such as the MSHCP, is discussed in CEQA. Specifically, Section 15125(d) of the CEQA Guidelines requires that the CEQA document discuss any inconsistencies between a proposed Project and applicable general plans and regional plans, including habitat conservation plans and natural community conservation plans. An assessment of the impacts to the MSHCP as a result of this Project is necessary to address CEQA requirements. To obtain additional information regarding the MSHCP please go to: http://rctlma.org/epd/WR-MSHCP.

For CDFW to evaluate any inconsistencies between the proposed Project and the MSHCP, CDFW recommends that the DEIR demonstrates, at a minimum, how the Project complies with:

The policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, set forth in Section 6.1.2 of the MSHCP; the policies for the Protection of Narrow Endemic Plant Species set forth in Section 6.1.3 of the

MSHCP; Additional Survey Needs and Procedures as set forth in Section 6.3.2 of the MSHCP; the Urban/Wildlands Interface Guidelines as set forth in Section 6.1.4 of the MSHCP; Best Management Practices and the sitting, construction, design, operation and maintenance guidelines as set forth in Section 7.0 and Appendix C of the MSHCP.

The EMWD is the lead agency but is not signatory to the MSHCP, therefore, in order to participate in the MSHCP they would need to act as a Participating Special Entity (PSE). If the EMWD chooses to act as a PSE and obtain take through the MSHCP then all of the MSHCP policies and procedures discussed above in this letter will apply to this Project, and the DEIR should discuss how the Project will demonstrate consistency with the MSHCP. If the Project is not processed through the MSHCP for covered species, then the Project may be subject to the Federal Endangered Species Act (FESA) and/or CESA for threatened, endangered, and/or candidate species.

Regardless of whether take of threatened and/or endangered species is obtained through the MSHCP or through a CESA ITP, the DEIR needs to address how the proposed Project will affect the policies and procedures of the MSHCP. Therefore, all surveys required by the MSHCP policies and procedures listed above to determine consistency with the MSHCP should be conducted and results included in the DEIR so that CDFW can adequately assess whether the Project will impact the MSHCP.

Stephens' Kangaroo Rat Habitat Conservation Plan

The Project occurs within the Stephens' kangaroo rat (*Dipodomys stephensi*) Habitat Conservation Plan (SKR HCP) fee area boundary, SKR HCP plan area map available here: https://rchca.us/DocumentCenter/View/200/SKR-Plan-Area. State and federal authorizations associated with the SKR HCP provide take authorization for Stephens' kangaroo rat within its boundaries, and the MSHCP provides Take Authorization for Stephens' kangaroo rat outside of the boundaries of the SKR HCP, but within the MSHCP area boundaries. The DEIR should identify if any portion of the Project will occur on SKR HCP lands, or on Stephens' kangaroo rat habitat lands outside of the SKR HCP, but within the MSHCP. Note that the SKR HCP allows for encroachment into the Stephens' kangaroo rat Core Reserve for public projects, however, there are no provisions for encroachment into the Core Reserve for privately owned projects. If impacts to Stephens' kangaroo rat habitat will occur from the proposed Project, the DEIR should specifically identify the total number of permanent impacts to Stephens' kangaroo rat core habitat and the appropriate mitigation to compensate for those impacts.

Lake and Streambed Alteration Program

Based on review of material submitted with the NOP and review of aerial photography, at least one drainage feature traverses the site. Depending on how the Project is designed and constructed, it is likely that the Project applicant will need to notify CDFW per Fish and Game Code section 1602. Fish and Game Code section 1602 requires an

entity to notify CDFW prior to commencing any activity that may do one or more of the following: substantially divert or obstruct the natural flow of any river, stream, or lake; substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or deposit debris, waste or other materials that could pass into any river, stream, or lake. Please note that "any river, stream or lake" includes those that are episodic (i.e., those that are dry for periods of time) as well as those that are perennial (i.e., those that flow year-round). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow.

Upon receipt of a complete notification, CDFW determines if the proposed Project activities may substantially adversely affect existing fish and wildlife resources and whether a Lake and Streambed Alteration (LSA) Agreement is required. An LSA Agreement includes measures necessary to protect existing fish and wildlife resources. CDFW may suggest ways to modify your Project that would eliminate or reduce harmful impacts to fish and wildlife resources.

CDFW's issuance of an LSA Agreement is a "project" subject to CEQA (see Pub. Resources Code § 21065). To facilitate issuance of an LSA Agreement, if necessary, the DEIR should fully identify the potential impacts to the lake, stream, or riparian resources, and provide adequate avoidance, mitigation, and monitoring and reporting commitments. Early consultation with CDFW is recommended since modification of the proposed Project may be required to avoid or reduce impacts to fish and wildlife resources. To submit a Lake or Streambed Alteration notification, please go to https://wildlife.ca.gov/Conservation/Environmental-Review/EPIMS .

ADDITIONAL COMMENTS AND RECOMMENDATIONS

To ameliorate the water demands of this Project, CDFW recommends incorporation of water-wise concepts in Project landscape design plans. In particular, CDFW recommends xeriscaping with locally native California species, and installing water-efficient and targeted irrigation systems (such as drip irrigation). Native plants support butterflies, birds, reptiles, amphibians, small mammals, bees, and other pollinators that evolved with those plants, more information on native plants suitable for the Project location and nearby nurseries is available at CALSCAPE: https://calscape.org/. Local water agencies/districts and resource conservation districts in your area may be able to provide information on plant nurseries that carry locally native species, and some facilities display drought-tolerant locally native species demonstration gardens (for example the Riverside-Corona Resource Conservation District in Riverside). Information on drought-tolerant landscaping and water-efficient irrigation systems is available on California's Save our Water website: https://saveourwater.com/ .

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, §

21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). Information can be submitted online or via completion of the CNDDB field survey form at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data . The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

ENVIRONMENTAL DOCUMENT FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying Project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.).

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP of a DEIR for the EM-11 Transmission Pipeline and Pump Station Project (SCH No. 2022070445) and recommends that the EMWD address the CDFW's comments and concerns in the forthcoming DEIR. Questions regarding this letter or further coordination should be directed to Breanna Machuca, Environmental Scientist, at breanna.machuca@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Kim Freeburn
84F92FFEEFD24C8...

Kim Freeburn
Acting Environmental Program Manager

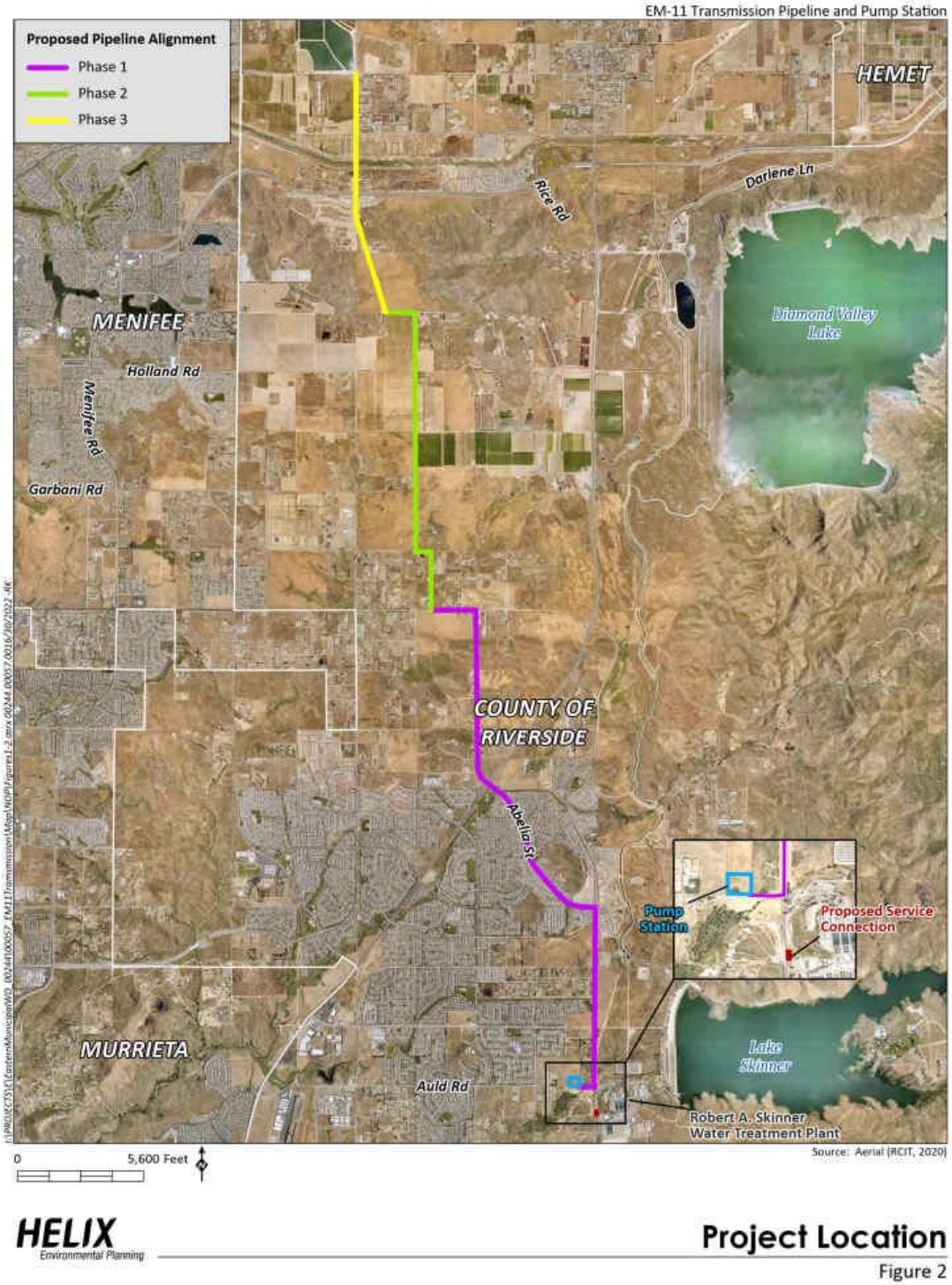
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Heather Pert, Senior Environmental Scientist, Supervisor
Inland Deserts Region
heather.pert@wildlife.ca.gov

Office of Planning and Research, State Clearinghouse, Sacramento
state.clearinghouse@opr.ca.gov

Tricia Campbell (Western Riverside County Regional Conservation Authority)
Director of Reserve Management and Monitoring
tcampbell@rctc.org

Exhibit 1. Project Location and Phase Locations of EM-11 Transmission Pipeline and Pump Station Project for the Eastern Municipal Water District.



NATIVE AMERICAN HERITAGE COMMISSION

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Laura Miranda
Luiseño

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EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok/Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

July 28, 2022

Joseph Broadhead
Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92570

Governor's Office of Planning & Research

AUG 01 2022

STATE CLEARINGHOUSE

Re: 2022070445, EM-11 Transmission Pipeline and Pump Station Project, Riverside County

Dear Mr. Broadhead:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

- **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
- **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:

- **a.** If part or all of the APE has been previously surveyed for cultural resources.
- **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
- **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
- **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. 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.

- **a.** 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.
- **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

JASON E. UHLEY
General Manager-Chief Engineer

1995 MARKET STREET
RIVERSIDE, CA 92501
951.955.1200
FAX 951.788.9965
www.rcflood.org
245406

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

August 22, 2022

Eastern Municipal Water District
Attn: Joseph Broadhead
2270 Trumble Road
Perris, CA 92570

Dear Mr. Broadhead:

Re: EMWD EIR EM-11 Transmission Pipeline & Pump Station Project

This letter is written in response to the Notice of Preparation (NOP) for the EM-11 Transmission Pipeline & Pump Station Project (Project). The Eastern Municipal Water District (EMWD) will be preparing a Draft Environmental Impact Report (DEIR) for the Project.

The proposed Project would assist in expansion of the EMWD treated water supply portfolio to meet demands resulting from long-term projected growth. The Project would be constructed in phases and includes three main components: (1) a new service connection (also referred to as a turnout) to receive treated water deliveries from The Metropolitan District of California (Metropolitan) Robert A. Skinner Water Treatment Plant (WTP) which would be online by 2030. This phase includes construction of a pump station with a capacity of 40 cubic feet per second (cfs), the turnout facility, and the 72-inch diameter pipeline segment from the turnout to Scott Road (approximately 4.9 miles long); (2) a new pump station that would connect to the turnout to supply water to the EMWD's service area which includes a transmission line by 2.9 miles to Holland Road with a 66-inch diameter pipeline; and phase (3) a new transmission pipeline which would be operational in 2040, and extends the line 2.1 miles to Simpson Road with a 54-inch pipeline. Collectively, these components are known as the EM-11 Project. Future improvements include increasing the flow of the pump station to 80 cfs in 2045 and 140 cfs at full buildout.

The Riverside County Flood Control and Water Conservation District (District) has the following comments/concerns that should be addressed in the DEIR.

1. Please be advised that any work that involves District rights of way or easements will require an encroachment permit from the District. As part of the encroachment permit process, the applicant will be required to submit a series of documents including but not limited to:
    a. California Environmental Quality Act (CEQA) Compliance: To help expedite the encroachment permit process, the District requests to be listed as a Responsible Agency in the Final EIR. Upon adoption of the final environmental document, please submit a copy of the adopted Final EIR to the District for consideration with your encroachment permit package. Please be sure to include all appendices that were used to support the conclusions found in the environmental document.

b. Regulatory Permits: If work within District rights of way or easements is required within open channel facilities (i.e., Salt Creek and French Valley Channel) regulatory permits may be required to comply with Section 404/401 of the Clean Water Act, and Section 1600 of the California Fish and Game Code. If regulatory permits are required, the applicant will be required to furnish such permits prior to the issuance of a District Encroachment Permit. The District will need to review these permits in order to verify that temporary and permanent impacts within the District's rights of way or easements are covered by the permits. The District will also need to confirm that no compensatory mitigation that would impede the District's maintenance activities is included within District rights of way. Regulatory permits should be submitted as part of the submittal for an encroachment permit. Please be sure to include plans and exhibits that indicate the specific location of where temporary and permanent impacts will occur within District rights of way or easements.

c. Multiple Species Habitat Conservation Plan (MSHCP) Consistency: The District is a permittee under the MSHCP. If an encroachment permit, or other District approval is required, the Project proponent will need to demonstrate that all Project related activities within the District rights of way or easements is consistent with the MSHCP. To accomplish this, the CEQA document should include a MSHCP consistency analysis with all of its supporting documents with the encroachment permit application. The MSHCP consistency report should address, at a minimum, Sections 6.1.2, 6.1.3, 6.1.4, 6.3.2, 7.3.7, 7.5.3 and Appendix C of the MSHCP.

To obtain further information regarding District encroachment permits and to find an application form, please refer to https://rcflood.org/I-Want-To/Services/Obtain-Encroachment-or-Access-Permit, or contact the District's Encroachment Permit Manager at 951.955.1266 to confirm the need for an encroachment permit and the requirements to obtaining one.

2. The proposed Project is located within the District's Perris Valley Master Drainage Plan (MDP) footprint. When fully implemented, MDP facilities will provide flood protection to relieve those areas within the plan boundaries of the most serious flooding problems and will provide adequate drainage outlets. The Mitigated Negative Declaration should consider any potential impacts to the MDP facilities. The District's MDP facility maps can be viewed online at http://content.rcflood.org/MDPADP/. To obtain further information on the MDP and proposed facilities, please contact Kyle Gallup of the District's Planning Section at 951.955.1345.

Thank you for the opportunity to comment on the NOP. Please forward any subsequent environmental documents regarding the Project to my attention at this office. Any further questions concerning this letter may be referred to me at 951.955.1526 or Carol Thompson at 951 .955.2313.

Very truly yours,

for KEVIN CUNNINGHAM
Environmental Project Manager

ec: Kyle Gallup
Joan Valle
Edwin Quiñonez

CAT:rlp

COUNTY OF RIVERSIDE
TRANSPORTATION AND LAND MANAGEMENT AGENCY

Mark Lancaster, P.E.
Director of Transportation

Mojahed Salama, P.E.
Deputy for Transportation/Capital Projects

Transportation Department

August 23, 2022

Joseph Broadhead
Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92572

RE: **Notice of Preparation of an Environmental Impact Report for the EM-11 Transmission Pipeline and Pump Station Project**

Dear Mr. Broadhead,

Thank you for the opportunity to review the Notice of Preparation of an Environmental Impact Report for the EM-11 Transmission Pipeline and Pump Station Project.

The proposed project is located within unincorporated areas of Riverside County. The EM-11 transmission pipeline will extend in a north-northwest direction approximately 10-12 miles through the southern Perris area. The proposed pump station and service connection are near the intersection of Auld Road and Washington Street.

The Riverside County Transportation Department (County) offers the following comments below.

There are several known development projects that are either undergoing the entitlement process or have been approved. The following projects below are projects that may have frontage along the proposed alignment of EM-11. The County recommends that the District contact and coordinate with the following projects/properties:

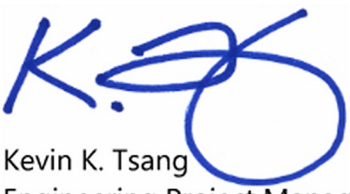
- TR34677 (APN 461150020)
- TR36417 (APN 461160029)
- PPT210139 (APN 461160048)
- CUP03569 (APN 461190097)
- TR30976 (APN 466340016)
- TR30977 (APN 466340020)
- TR36467 (APN 466350018)
- PPT180024 (APN 466310026)
- TTM38483 (APN 466310019)
- PAR220038 (APN 472070001)

- PAR01387 (APN 472110002)
- TR37089 (APN 472090020)
- PP26092 (APN 472320035)
- CUP210119 (APN 476010083)
- TR30808 (APN 461280024)
- TR30266 (APN 461160022)
- PAR01254 (APN 461280021)
- TR31892 (APN 461561024)
- PAR01020 (APN 466350005)
- PAR01447 (APN 472320027)
- PP19442 (APN 476010072)
- TR30988 (APN 476300006)
- TR32272 (APN 472210002)
- PAR01305 (APN 472210007)
- TR37028 (APN 964790001)
- TR37028 (APN 964780026)
- PAR00348 (APN 964030015)
- TR28460 (APN 964030004)
- PPT180013 (APN 964030005)

For the portions of the transmission pipeline that propose to utilize public road right-of-way, every effort should be made to locate the pipeline within the ultimate location to minimize "throwaway" improvements. For the ultimate designation of roadways, please refer to the County General Plan Circulation Element. The ultimate location of utilities within the roadway are shown in Std. No. 817, Ord. No. 461.

Thank you again for the opportunity to review the Notice of Preparation. Please contact me at (951) 955-6828 with questions or comments.

Sincerely,



Kevin K. Tsang
Engineering Project Manager
KKT: EC

Cc: Mark Lancaster, Director of Transportation
Mojahed Salama, Deputy Director of Transportation
Russell Williams, Development Review Manager

From: Broadhead, Joseph
To: Tricia Campbell
Subject: RE: EM-11 Transmission Pipeline and Pump Station NOP
Date: Tuesday, August 16, 2022 5:26:00 PM
Attachments: image008.png
image009.png
image010.png
image011.png
image012.png
image013.png
image014.png
image015.png

Tricia,

Thank you for the information. Would be great if RCA could send in a response to the NOP.

Appreciate it!

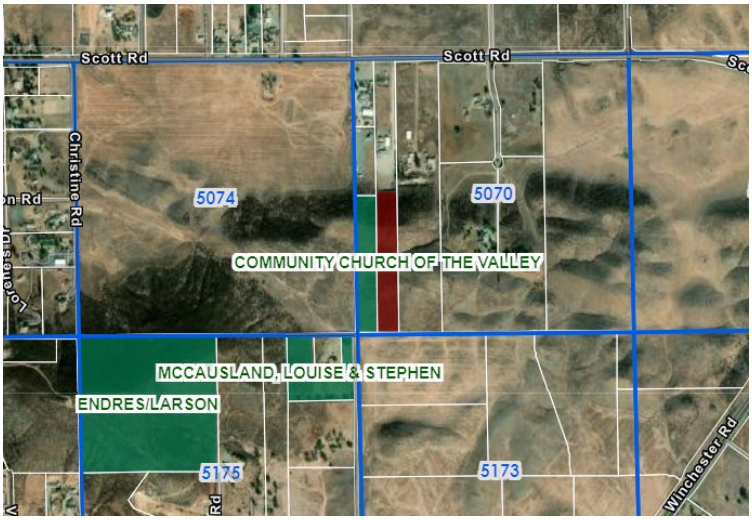
Joseph Broadhead
Principal Water Resource Specialist
Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, CA 92572-8300
T (951) 928-3777 ext. 4545
broadhej@emwd.org

From: Tricia Campbell <TCampbell@RCTC.org>
Sent: Tuesday, August 16, 2022 11:04 AM
To: Broadhead, Joseph <broadhej@emwd.org>
Subject: EM-11 Transmission Pipeline and Pump Station NOP

Good morning, Joseph:

We received an NOP for the EM-11 Transmission Pipeline and Pump Station project and just want to let you know that MSHCP reserve lands owned by the RCA appear to occur adjacent to a portion of the proposed project alignment. I have inserted below a screenshot of the reserve lands. The RCA is available to provide additional details if that would help with your project.

Sincerely,
Tricia



Tricia A. Campbell
Regional Conservation Deputy Director
RCA/Riverside County Transportation Commission
951.787.7141 Main | 951.955.8805 Direct | 951.212.5661 Mobile
Email: tcampbell@rctc.org
Physical Address: 3403 Tenth St. (Ste. 320) Riverside, CA 92501
Mail: RCTC/RCA - PO Box 12008, Riverside, CA 92502
rctc.org | wrc-rca.org



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THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 7, 2022 **EMAIL**

Attn: Joseph Broadhead
Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92570

Dear Mr. Joseph Broadhead:

Notice of Preparation of an Environmental Impact Report for the
EM-11 Transmission Pipeline and Pump Station Project

The Metropolitan Water District of Southern California (Metropolitan) reviewed the Notice of Preparation of an Environmental Impact Report (EIR) for the EM-11 Transmission Pipeline and Pump Station Project (Project). The Eastern Municipal Water District (EMWD) is proposing the EM-11 Project to assist in expansion of its treated water supply portfolio to meet demands resulting from long-term projected growth.

At least one of the EMWD's Project alternatives includes three main components that will affect Metropolitan: (1) a new service connection to receive treated water deliveries from Metropolitan's Skinner Water Treatment Plant; (2) a new pump station that would connect to the turnout to supply water to the District's service area; and (3) a new transmission pipeline. This proposed Project alternative would be located within unincorporated areas of Riverside County through Perris Valley, and near the intersection of Auld Road and Washington Street.

At least one alternative for EMWD's Project is contingent upon the use of Metropolitan right of way for its proposed new pipelines and pump station. As shown on the attached map, Metropolitan's Skinner Water Treatment Plant and The Project proposes to use portions of the San Diego Pipeline 1 and 2 rights-of-way for EMWD's new pipelines, as well as siting a new pump station on Metropolitan property at its Skinner Water Treatment Plant. Long-term use of Metropolitan property will require Metropolitan Board approval. As such, the EIR should identify Metropolitan as a responsible agency.

EMWD also needs a new service connection for the Project. This also requires Metropolitan's approval. EMWD needs to coordinate with Metropolitan staff for the study and consideration of this connection, and it will need to submit a completed the attached request for service connection forms to commence this study.

Additionally, Metropolitan owns and operates facilities within and adjacent to the proposed Project Limits. Metropolitan is concerned with potential impacts to these facilities and rights-of-way that may result from implementation of the proposed Project.

Metropolitan must be allowed to maintain its rights-of-way and access to its facilities and properties at all times, in order to repair and maintain the current condition of those facilities. In order to avoid potential conflicts with Metropolitan's rights-of-way, we require that any design plans for any activity in the area of Metropolitan's pipelines or facilities be submitted for our review and written approval. Metropolitan will not permit procedures that could subject the pipes to excessive vehicle, impact or vibratory loads. Any future design plans associated with this Project should be submitted to the attention of Metropolitan's Substructures Team. Approval of the Project should be contingent on Metropolitan's approval of design plans for portions of the proposed Project that could impact its facilities.

Detailed prints of drawings of Metropolitan's pipelines and rights-of-way may be obtained by contacting Metropolitan's Substructures Team at EngineeringSubstructures@mwdh2o.com. To assist Eastern Municipal Water District in preparing plans that are compatible with Metropolitan's facilities and rights-of-way, enclosed is a copy of the "Guidelines for Developments in the Area of Facilities, Fee Properties, and/or Easement of The Metropolitan Water District of Southern California." Please note that Metropolitan's facilities and rights-of-way must be fully shown and identified as Metropolitan's on all designs or plans submitted.

Metropolitan requests that EMWD avoid any potential impacts that may occur to the Skinner Water Treatment Plant due to implementation of the proposed Project or where applicable, and propose mitigation measures to offset any potential impacts. It will also be necessary for Eastern Municipal Water District to consider Metropolitan's Skinner Water Treatment Plant in its project planning.

Additionally, appropriate property rights must be obtained from Metropolitan for any project activities within Metropolitan's property, such as the granting of a road easement or license. The granting of property rights may be subject to Metropolitan's Board of Director's approval. No work must be done including potholing or any studies within Metropolitan's property prior to the execution of an appropriate agreement. Please contact Metropolitan's Real Property Group regarding the process for obtaining access or property rights at RealEstateServices@mwdh2o.com. Metropolitan recommends that the EIR include reference to Metropolitan's property and granting of an agreement, and also acknowledge Metropolitan as a responsible agency "expected to use the EIR in their decision-making" per CEQA Guidelines Section 15124(d)(A).

Metropolitan encourages projects within its service area to include water conservation measures. While Metropolitan continues to build new supplies and develop means for more efficient use of current resources, projected population and economic growth will increase demands on the current system. Water conservation, reclaimed water use, and groundwater recharge programs are integral components to regional water supply planning. Metropolitan supports mitigation measures such as using water efficient fixtures, drought tolerant landscaping, and reclaimed water to offset any increase in water use associated with the proposed Project.

We appreciate the opportunity to provide input to your planning process and look forward to receiving future plans and documentation for this Project. If we can be of further assistance, please contact Liz Florence at (213) 217-7193 or at eflorence@mwdh2o.com.

Very truly yours,

Sean Carlson

Sean Carlson
Manager, Environmental Planning

Enclosures:

1) Location Map of Metropolitan's Skinner Water Treatment Plant and San Diego Pipeline 1 and 2 rights-of-way within the Project Limits
2) Request for Service Connection forms
3) Guidelines for Developments in the Area of Facilities, Fee Properties, and/or Easements of The Metropolitan Water District of Southern California

Location Map



SERVICE CONNECTION REQUIREMENTS FORM

For MWD Use Only

Member Public Agency: Eastern Municipal Water District

Conn. No.: EM-11 Modifications and Transmission Line

Sub-agency: _____

Feeder: _____ Station: _____

Location: _____

MWD Outlet Size and Type: _____

Estimated Capacity Required:

(1) Minimum flow: _____ cfs

(2) Maximum flow: _____ cfs

(3) Initial deliveries: _____ AF Annually

(4) Ultimate deliveries: _____ AF Annually

General:

(1) Do you anticipate enlarging this service connection? _____Yes ☐ _____ No

(1a) If yes, when: _____, possible maximum flow: _____ cfs.

(2) Will this service connection deliver water into a main connected to a storage facility (reservoir, tank, etc.) of sufficient capacity to satisfy daily peaking demands within your system? _____Yes ☐ _____No

(2a) If yes, indicate capacity of facility provided: _____

(2b) If no, please state how you intend to avoid imposing daily peak flows on the service connection.

(3) Will service connection deliver to a pump station? _____Yes _____No

(3a) If yes, indicate no. of pumps _____, capacity of each pump _____

(4) Please provide a description or sketch of the flow control or pressure reducing system.

_____

_____

(4a) MWD uses a flow metering system that can supply a 4 to 20 milliamp flow signal proportional to flow to a remote receiver, if so required. Do you require a remote signal? ☐ Yes (if yes, 4b and 4c apply) ☐ No

(4b) The Agency shall not use the flow signal to operate their control valves or any other process equipment that directly relies on the flow signal.
(4c) The flow signal shall not be used for water billing.

(5) Type of pipe and size: _____ O.D. _____ I.D. that MWD pipe will tie into.

(6) Centerline elevation of your pipe (if known) at tie-in to MWD service connection pipe:

_____ Datum used: _____

(7) Sketch showing location of your pipeline in vicinity of proposed service connection.

(8) Design and construction by: ☐ Metropolitan ☐ Agency Consultant & Contractor

(9) Date of desired initial delivery through service connection applied for:

_____ (Month) _____ (Year)

Note: If the information relating to some of the questions is not available at present, please forward such information when it becomes available.

A comprehensive surge analysis may be required as part of the service connection design process. With each service connection request, the member agency or its representative shall submit a preliminary surge evaluation and Metropolitan will then determine if a comprehensive surge analysis will be required. (The preliminary surge analysis shall be submitted when the preliminary design fee payment is made.) If required, the comprehensive analysis shall prove that the upsurge pressures induced on Metropolitan's pipelines, associated with the operation of the service connection (normal and/or emergency operation) shall not exceed a maximum allowed value, as determined by Metropolitan. In addition, the surge analysis shall prove to Metropolitan's

satisfaction that no point along Metropolitan's pipelines shall be subjected to negative pressure due to the down surge pressures.

***** The Agency shall take the lead in all environmental procedures for purposes of compliance with regulations implementing the California Environmental Quality Act (CEQA).**

Remarks:_____

_____

_____

By:_____

Date:_____ Title:_____

Guidelines for Improvements and Construction Projects Proposed in the Area of Metropolitan's Facilities and Rights-of-Way

July 2018

Prepared By:
The Metropolitan Water District of Southern California
Substructures Team, Engineering Services
700 North Alameda Street
Los Angeles, California 90012

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Additional Copies: To obtain a copy of this document, please contact the Engineering Services Group, Substructures Team.

Disclaimer

Metropolitan assumes no responsibility for the accuracy of the substructure information herein provided. The user assumes responsibility for verifying substructure locations before excavating and assumes all liability for damage to Metropolitan's facilities as a result of such excavation. Additionally, the user is cautioned to conduct surveys and other field investigations as deemed prudent, to assure that project plans are correct. The appropriate representative from Metropolitan must be contacted at least two working days, before any work activity in proximity to Metropolitan's facilities.

It generally takes 30 days to review project plans and provide written responses. Metropolitan reserves the right to modify requirements based on case-specific issues and regulatory developments.

PUBLICATION HISTORY:

Initial Release	*July 2018*

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1.0 GENERAL INFORMATION

Note: Underground Service Alert at 811 must be notified at least two working days before excavating in proximity to Metropolitan's facilities.

1.1 Introduction

These guidelines provide minimum design and construction requirements for any utilities, facilities, developments, and improvements, or any other projects or activities, proposed in or near Metropolitan Water District of Southern California (Metropolitan) facilities and rights-of-way. Additional conditions and stipulations may also be required depending on project and site specific conditions. Any adverse impacts to Metropolitan's conveyance system, as determined by Metropolitan, will need to be mitigated to its satisfaction.

All improvements and activities must be designed so as to allow for removal or relocation at builder or developer expense, as set forth in the paramount rights provisions of Section 20.0. Metropolitan shall not be responsible for repair or replacement of improvements, landscaping or vegetation in the event Metropolitan exercises its paramount rights powers.

1.2 Submittal and Review of Project Plans/Utilities and Maps

Metropolitan requires project plans/utilities be submitted for all proposed activities that may impact Metropolitan's facilities or rights-of-way. Project plans shall include copies of all pertinent utilities, sewer line, storm drain, street improvement, grading, site development, landscaping, irrigation and other plans, all tract and parcel maps, and all necessary state and federal environmental documentation. Metropolitan will review the project plans and provide written approval, as it pertains to Metropolitan's facilities and rights-of-way. Written approval from Metropolitan must be obtained, prior to the start of any activity or construction in the area of Metropolitan's facilities or rights-of-way. Once complete project plans and supporting documents are submitted to Metropolitan, it generally takes 30 days to review and to prepare a detailed written response. Complex engineering plans that have the potential for significant impacts on Metropolitan's facilities or rights-of-way may require a longer review time.

Project plans, maps, or any other information should be submitted to Metropolitan's Substructures Team at the following mailing address:

Attn: Substructures Team
The Metropolitan Water District of Southern California
700 North Alameda St.
Los Angeles, CA 90012

General Mailing Address: **P.O. Box 54153**
Los Angeles, CA 90054-0153

Email: EngineeringSubstructures@mwdh2o.com

For additional information, or to request prints of detailed drawings for Metropolitan's facilities and rights-of-way, please contact Metropolitan's Substructures Team at 213-217-7663 or EngineeringSubstructures@mwdh2o.com.

1.3 Identification of Metropolitan's Facilities and Rights-of-Way

Metropolitan's facilities and rights-of-way must be fully shown and identified as Metropolitan's, with official recording data, on the following:

A. All applicable plans

B. All applicable tract and parcel maps

Metropolitan's rights-of-ways and existing survey monuments must be tied dimensionally to the tract or parcel boundaries. Metropolitan's Records of Survey must be referenced on the tract and parcel maps with the appropriate Book and Page.

2.0 General Requirements

2.1 Vehicular Access

Metropolitan must have vehicular access along its rights-of-way at all times for routine inspection, patrolling, operations, and maintenance of its facilities and construction activities. All proposed improvements and activities must be designed so as to accommodate such vehicular access.

2.2 Fences

Fences installed across Metropolitan's rights-of-way must include a 16-foot-wide gate to accommodate vehicular access by Metropolitan. Additionally, gates may be required at other specified locations to prevent unauthorized entry into Metropolitan's rights-of-way.

All gates must accommodate a Metropolitan lock or Knox-Box with override switch to allow Metropolitan unrestricted access. There should be a minimum 20-foot setback for gates from the street at the driveway approach. The setback is necessary to allow Metropolitan vehicles to safely pull off the road prior to opening the gate.

2.3 Driveways and Ramps

Construction of 16-foot-wide commercial-type driveway approaches is required on both sides of all streets that cross Metropolitan's rights-of-way. Access ramps, if necessary, must be a minimum of 16 feet wide.

There should be a minimum 20-foot setback for gates from the street at the driveway approach. Grades of ramps and access roads must not exceed 10 percent; if the slope of an access ramp or road must exceed 10 percent due to topography, then the ramp or road must be paved.

2.4 Walks, Bike Paths, and Trails

All walkways, bike paths, and trails along Metropolitan's rights-of-way must be a minimum 12-foot wide and have a 50-foot or greater radius on all horizontal curves if also used as Metropolitan's access roads. Metropolitan's access routes, including all walks and drainage facilities crossing the access routes, must be constructed to American Association of State Highway and Transportation Officials (AASHTO) H-20 loading standards (see Figure 1). Additional requirements will be placed on equestrian trails to protect the water quality of Metropolitan's pipelines and facilities.

2.5 Clear Zones

A 20-foot-wide clear zone is required to be maintained around Metropolitan's manholes and other above-ground facilities to accommodate vehicular access and maintenance. The clear zone should slope away from Metropolitan's facilities on a grade not to exceed 2 percent.

2.6 Slopes

Cut or fill slopes proposed within Metropolitan's rights-of-way must not exceed 10 percent. The proposed grade must not worsen the existing condition. This restriction is required to facilitate Metropolitan use of construction and maintenance equipment and allow uninhibited access to above-ground and below-ground facilities.

2.7 Structures

Construction of structures of any type is not allowed within the limits of Metropolitan's rights-of-way to avoid interference with the operation and maintenance of Metropolitan's facilities and possible construction of future facilities.

Footings and roof eaves of any proposed buildings adjacent to Metropolitan's rights-of-way must meet the following criteria:

A. Footings and roof eaves must not encroach onto Metropolitan's rights-of-way.

B. Footings must not impose any additional loading on Metropolitan's facilities.

C. Roof eaves must not overhang onto Metropolitan's rights-of-way.

Detailed plans of footings and roof eaves adjacent to Metropolitan's rights-of-way must be submitted for Metropolitan's review and written approval, as pertains to Metropolitan's facilities.

2.8 Protection of Metropolitan Facilities

Metropolitan facilities within its rights-of-way, including pipelines, structures, manholes, survey monuments, etc., must be protected from damage by the project proponent or property owner, at no expense to Metropolitan. The exact location, description and method of protection must be shown on the project plans.

2.9 Potholing of Metropolitan Pipelines

Metropolitan's pipelines must be potholed in advance, if the vertical clearance between a proposed utility and Metropolitan's pipeline is indicated to be 4 feet or less. A Metropolitan representative must be present during the potholing operation and will assist in locating the pipeline. Notice is required, a minimum of three working days, prior to any potholing activity.

2.10 Jacked Casings or Tunnels

A. General Requirements

Utility crossings installed by jacking, or in a jacked casing or tunnel under/over a Metropolitan pipeline, must have at least 3 feet of vertical clearance between the outside diameter of the pipelines and the jacked pipe, casing, or tunnel. The actual

cover over Metropolitan's pipeline shall be determined by potholing, under Metropolitan's supervision.

Utilities installed in a jacked casing or tunnel must have the annular space between the utility and the jacked casing or tunnel filled with grout. Provisions must be made for grouting any voids around the exterior of the jacked pipe, casing, or tunnel.

B. Jacking or Tunneling Procedures

Detailed jacking, tunneling, or directional boring procedures must be submitted to Metropolitan for review and approval. The procedures must cover all aspects of operation, including, but not limited to, dewatering, ground control, alignment control, and grouting pressure. The submittal must also include procedures to be used to control sloughing, running, or wet ground, if encountered. A minimum 10-foot clearance must be maintained between the face of the tunneling or receiving pits and outside edges of Metropolitan's facility.

C. Shoring

Detailed drawings of shoring for jacking or receiving pits must be submitted to Metropolitan for review and written-approval. (See Section 10 for shoring requirements).

D. Temporary Support

Temporary support of Metropolitan's pipelines may be required when a utility crosses under a Metropolitan pipeline and is installed by means of an open trench. Plans for temporary support must be reviewed and approved in writing by Metropolitan. (See Section 11, Supports of Metropolitan Facilities).

3.0 Landscaping

3.1 Plans

All landscape plans must show the location and limits of Metropolitan's right-of-way and the location and size of Metropolitan's pipeline and related facilities therein. All landscaping and vegetation shall be subject to removal without notice, as may be required by Metropolitan for ongoing maintenance, access, repair, and construction activities. Metropolitan will not be financially responsible for the removal of any landscaping and vegetation.

3.2 Drought-Tolerant Native and California Friendly Plants

Metropolitan recommends use of drought-tolerant native and California Friendly® plants (excluding sensitive plants) on proposed projects. For more information regarding California Friendly® plants refer to www.bewaterwise.com.

3.3 Trees

Trees are generally prohibited within Metropolitan's rights-of-way as they restrict Metropolitan's ability to operate, maintain and/or install new pipeline(s) located within these rights-of-way. Metropolitan will not be financially responsible for the removal and replacement of any existing trees should they interfere with access and any current or future Metropolitan project located within the right-of-way.

3.4 Other Vegetation

Shrubs, bushes, vines, and groundcover are generally allowed within Metropolitan's rights-of-way. Larger shrubs are not allowed on Metropolitan fee properties; however, they may be allowed within its easements if planted no closer than 15 feet from the outside edges of existing or future Metropolitan facilities. Only groundcover is allowed to be planted directly over Metropolitan pipeline, turf blocks or similar is recommended to accommodate our utility vehicle access. Metropolitan will not be financially responsible for the removal and replacement of the vegetation should it interfere with access and any current or future Metropolitan project.

3.5 Irrigation

Irrigation systems are acceptable within Metropolitan's rights-of-way, provided valves and controllers are located near the edges of the right-of-way and do not interfere with Metropolitan vehicular access. A shutoff valve should also be located along the edge of the right-of-way that will allow the shutdown of the system within the right-of-way should Metropolitan need to do any excavation. No pooling or saturation of water above Metropolitan's pipeline and right-of-way is allowed. Additional restrictions apply to non-potable water such as Recycled Water and are covered on Table 3 of Page 20.

3.6 Metropolitan Vehicular Access

Landscape plans must show Metropolitan vehicular access to Metropolitan's facilities and rights-of-way and must be maintained by the property owner or manager or homeowners association at all times. Walkways, bike paths, and trails within Metropolitan's rights-of-way may be used as Metropolitan access routes. (See Section 2.4, Walks, Bike Paths, and Trails).

4.0 General Utilities

Note: For non-potable piping like sewer, hazardous fluid, storm drain, disinfected tertiary recycled water and recycled water irrigation see Table 1 through Table 3.

4.1 Utility Structures

Permanent utility structures (e.g., manholes, power poles, pull boxes, electrical vaults, etc.) are not allowed within Metropolitan's rights-of-way. Metropolitan requests that all permanent utility structures within public streets be placed as far from its pipelines and facilities as practical, but not closer than 5 feet from the outside edges of Metropolitan facilities.

Note: Non-potable utility pipelines are an exception to the 5-foot minimum clearance. Non-potable utility pipelines should have 10 feet of separation.

4.2 Utility Crossings

Metropolitan requests a minimum of 1 foot of vertical clearance between Metropolitan's pipeline and any utility crossing the pipeline. Utility lines crossing Metropolitan's pipe-lines must be as perpendicular to the pipeline as possible. Cross-section drawings, showing proposed locations and elevations of utility lines and locations of Metropolitan's pipelines and limits of rights-of-way, must be submitted with utility plans, for all

crossings. Metropolitan's pipeline must be potholed under Metropolitan's supervision at the crossings (See Section 2.9).

4.3 Longitudinal Utilities

Installation of longitudinal utilities is generally not allowed along Metropolitan's rights-of-way. Within public streets, Metropolitan requests that all utilities parallel to Metropolitan's pipelines and appurtenant structures (facilities) be located as far from the facilities as possible, with a minimum clearance of 5 feet from the outside edges of the pipeline.

Note: Non-potable utility pipelines are an exception to the 5-foot minimum clearance. Non-potable utility pipelines should have 10 feet of separation (for more information See Table 1 on Page 18).

4.4 Underground Electrical Lines

Underground electrical conduits (110 volts or greater) which cross a Metropolitan's pipeline must have a minimum of 1 foot of vertical clearance between Metropolitan's pipeline and the electrical lines. Longitudinal electrical lines, including pull boxes and vaults, in public streets should have a minimum separation of 5 feet from the edge of a Metropolitan pipeline or structures.

4.5 Fiber Optic Lines

Fiber optic lines installed by directional boring require a minimum of 3 feet of vertical clearance when boring is over Metropolitan's pipelines and a minimum of 5 feet of vertical clearance when boring is under Metropolitan's pipelines. Longitudinal fiber optic lines, including pull boxes, in public streets should have a minimum separation of 5 feet from the edge of a Metropolitan pipelines or structures. Potholing must be performed, under Metropolitan's supervision, to verify the vertical clearances are maintained.

4.6 Overhead Electrical and Telephone Lines

Overhead electrical and telephone lines, where they cross Metropolitan's rights-of-way, must have a minimum 35 feet of clearance, as measured from the ground to the lowest point of the overhead line. Overhead electrical lines poles must be located at least 30 feet laterally from the edges of Metropolitan's facilities or outside Metropolitan's right-of-way, whichever is greater.

Longitudinal overhead electrical and or telephone lines in public streets should have a minimum separation of 10 feet from the edge of a Metropolitan pipelines or structures where possible.

4.7 Sewage Disposal Systems

Sewage disposal systems, including leach lines and septic tanks, must be a minimum of 100 feet from the outside limits of Metropolitan's rights-of-way or the edge of its facilities, whichever is greater. If soil conditions are poor, or other adverse site-specific conditions exist, a minimum distance of 150 feet is required. They must also comply with local and state health code requirements as they relate to sewage disposal systems in proximity to major drinking water supply pipelines.

4.8 Underground Tanks

Underground tanks containing hazardous materials must be a minimum of 100 feet from the outside limits of Metropolitan's rights-of-way or edge of its facilities, whichever is greater. In addition, groundwater flow should be considered with the placement of underground tanks down-gradient of Metropolitan's facilities.

5.0 Specific Utilities: Non-Potable Utility Pipelines

In addition to Metropolitan's general requirements, installation of non-potable utility pipelines (e.g., storm drains, sewers, and hazardous fluids pipelines) in Metropolitan's rights-of-way and public street rights-of-way must also conform to the State Water Resources Control Board's Division of Drinking Water (DDW) regulation (Waterworks Standards) and guidance for separation of water mains and non-potable pipelines and to applicable local county health code requirements. Written approval is required from DDW for the implementation of alternatives to the Waterworks Standards and, effective December 14, 2017, requests for alternatives to the Waterworks Standards must include information consistent with: DDW's Waterworks Standards Main Separation Alternative Request Checklist.

In addition to the following general guidelines, further review of the proposed project must be evaluated by Metropolitan and requirements may vary based on site specific conditions.

A. Sanitary Sewer and Hazardous Fluids (General Guideline See Table 1 on Page 18)

B. Storm Drain and Recycled Water (General Guideline See Table 2 on Page 19)

C. Irrigation with Recycled Water (General Guideline See Table 3 on Page 20)

D. Metropolitan generally does not allow Irrigation with recycled water to be applied directly above its treated water pipelines

E. Metropolitan requests copies of project correspondence with regulating agencies (e.g., Regional Water Quality Control Board, DDW); regarding the application of recycled water for all projects located on Metropolitan's rights-of-way

6.0 Cathodic Protection/Electrolysis Test Stations

6.1 Metropolitan Cathodic Protection

Metropolitan's existing cathodic protection facilities in the vicinity of any proposed work must be identified prior to any grading or excavation. The exact location, description, and type of protection must be shown on all project plans. Please contact Metropolitan for the location of its cathodic protection stations.

6.2 Review of Cathodic Protection Systems

Metropolitan must review any proposed installation of impressed-current cathodic protection systems on pipelines crossing or paralleling Metropolitan's pipelines to determine any potential conflicts with Metropolitan's existing cathodic protection system.

7.0 Drainage

7.1 Drainage Changes Affecting Metropolitan Rights-of-Way

Changes to existing drainage that could affect Metropolitan's rights-of-way require Metropolitan's approval. The project proponent must provide acceptable solutions to ensure Metropolitan's rights-of-way are not negatively affected by changes in the drainage conditions. Plans showing the changes, with a copy of a supporting hydrology report and hydraulic calculations, must be submitted to Metropolitan for review and approval. Long term maintenance of any proposed drainage facilities must be the responsibility of the project proponent, City, County, homeowner's association, etc., with a clear understanding of where this responsibility lies. If drainage must be discharged across Metropolitan's rights-of-way, it must be carried across by closed conduit or lined open channel and must be shown on the plans.

7.2 Metropolitan's Blowoff and Pumpwell Structures

Any changes to the existing local watercourse systems will need to be designed to accommodate Metropolitan's blowoff and pumpwell structures, which periodically convey discharged water from Metropolitan's blowoff and pumping well structures during pipeline dewatering. The project proponents' plans should include details of how these discharges are accommodated within the proposed development and must be submitted to Metropolitan for review and approval. Any blowoff discharge lines impacted must be modified accordingly at the expense of the project proponent.

8.0 Grading and Settlement

8.1 Changes in Cover over Metropolitan Pipelines

The existing cover over Metropolitan's pipelines must be maintained unless Metropolitan determines that proposed changes in grade and cover do not pose a hazard to the integrity of the pipeline or an impediment to its maintenance capability. Load and settlement or rebound due to change in cover over a Metropolitan pipeline or ground in the area of Metropolitan's rights-of-way will be factors considered by Metropolitan during project review.

In general, the minimum cover over a Metropolitan pipeline is 4 feet and the maximum cover varies per different pipeline. Any changes to the existing grade may require that Metropolitan's pipeline be potholed under Metropolitan's supervision to verify the existing cover.

8.2 Settlement

Any changes to the existing topography in the area of Metropolitan's pipeline or right-of-way that result in significant settlement or lateral displacement of Metropolitan's pipelines are not acceptable. Metropolitan may require submittal of a soils report showing the predicted settlement of the pipeline at 10-foot intervals for review. The data must be carried past the point of zero change in each direction and the actual size and varying depth of the fill must be considered when determining the settlement. Possible settlement due to soil collapse, rebound and lateral displacement must also be included.

In general, the typical maximum allowed deflection for Metropolitan's pipelines must not exceed a deflection of 1/4-inch for every 100 feet of pipe length. Metropolitan may require additional information per its Geotechnical Guidelines. Please contact Metropolitan's Substructures Team for a copy of the Geotechnical Guidelines.

9.0 Construction Equipment

9.1 Review of Proposed Equipment

Use of equipment across or adjacent to Metropolitan's facilities is subject to prior review and written approval by Metropolitan. Excavation, backfill, and other work in the vicinity of Metropolitan's facilities must be performed only by methods and with equipment approved by Metropolitan. A list of all equipment to be used must be submitted to Metropolitan a minimum of 30 days before the start of work.

A. For equipment operating within paved public roadways, equipment that imposes loads not greater than that of an AASHTO H-20 vehicle (see Figure 1 on Page 21) may operate across or adjacent to Metropolitan's pipelines provided the equipment operates in non-vibratory mode and the road remains continuously paved.

B. For equipment operating within unpaved public roadways, when the total cover over Metropolitan's pipeline is 10 feet or greater, equipment imposing loads no greater than those imposed by an AASHTO H-20 vehicle may operate over or adjacent to the pipeline provided the equipment is operated in non-vibratory mode. For crossings, vehicle path shall be maintained in a smooth condition, with no breaks in grade for 3 vehicle lengths on each side of the pipeline.

9.2 Equipment Restrictions

In general, no equipment may be used closer than 20 feet from all Metropolitan above-ground structures. The area around the structures should be flagged to prevent equipment encroaching into this zone.

9.3 Vibratory Compaction Equipment

Vibratory compaction equipment may not be used in vibratory mode within 20 feet of the edge of Metropolitan's pipelines.

9.4 Equipment Descriptions

The following information/specifications for each piece of equipment should be included on the list:

A. A description of the equipment, including the type, manufacturer, model year, and model number. For example, wheel tractor-scraper, 1990 Caterpillar 627E.

B. The empty and loaded total weight and the corresponding weight distribution. If equipment will be used empty only, it should be clearly stated.

C. The wheel base (for each axle), tread width (for each axle), and tire footprint (width and length) or the track ground contact (width and length), and track gauge (center to center of track).

10.0 Excavations Close to Metropolitan Facilities

10.1 Shoring Design Submittal

Excavation that impacts Metropolitan's facilities requires that the contractor submit an engineered shoring design to Metropolitan for review and acceptance a minimum of 30 days before the scheduled start of excavation. Excavation may not begin until the shoring design is accepted in writing by Metropolitan.

Shoring design submittals must include all required trenches, pits, and tunnel or jacking operations and related calculations. Before starting the shoring design, the design engineer should consult with Metropolitan regarding Metropolitan's requirements, particularly as to any special procedures that may be required.

10.2 Shoring Design Requirements

Shoring design submittals must be stamped and signed by a California registered civil or structural engineer. The following requirements apply:

A. The submitted shoring must provide appropriate support for soil adjacent to and under Metropolitan's facilities.

B. Shoring submittals must include detailed procedures for the installation and removal of the shoring.

C. Design calculations must follow the Title 8, Chapter 4, Article 6 of the California Code of Regulations (CCR) guidelines. Accepted methods of analysis must be used.

D. Loads must be in accordance with the CCR guidelines or a soils report by a geotechnical consultant.

E. All members must be secured to prevent sliding, falling, or kickouts.

Metropolitan's pipelines must be located by potholing under Metropolitan's supervision before the beginning construction. Use of driven piles within 20 feet of the centerline of Metropolitan's pipeline is not allowed. Piles installed in drilled holes must have a minimum 2-foot clearance between Metropolitan's pipeline and the edge of the drilled hole, and a minimum of 1-foot clearance between any part of the shoring and Metropolitan's pipeline.

11.0 Support of Metropolitan Facilities

11.1 Support Design Submittal

If temporary support of a Metropolitan facility is required, the contractor shall submit a support design plan to Metropolitan for review and approval a minimum of 30 days before the scheduled start of work. Work may not begin until the support design is approved in writing by Metropolitan. Before starting design, the design engineer should consult with Metropolitan regarding Metropolitan's requirements.

11.2 Support Design Requirements

Support design submittals must be prepared, stamped, and signed by a California registered civil or structural engineer. The following requirements apply:

A. Support drawings must include detailed procedures for the installation and removal of the support system.

B. Design calculations must follow accepted practices, and accepted methods of analysis must be used.

C. Support designs must show uniform support of Metropolitan's facilities with minimal deflection.

D. The total weight of the facility must be transferred to the support system before supporting soil is fully excavated.

E. All members must be secured to prevent sliding, falling, or kickouts.

12.0 Backfill

12.1 Metropolitan Pipeline Not Supported

In areas where a portion of Metropolitan pipeline is not supported during construction, the backfill under and to an elevation of 6 inches above the top of the pipeline must be one-sack minimum cement sand slurry. To prevent adhesion of the slurry to Metropolitan's pipeline, a minimum 6-mil-thick layer of polyethylene sheeting or similar approved sheeting must be placed between the concrete support and the pipeline.

12.2 Metropolitan Pipeline Partially Exposed

In areas where a Metropolitan pipeline is partially exposed during construction, the backfill must be a minimum of 6 inches above the top of the pipeline with sand compacted to minimum 90 percent compaction.

12.3 Metropolitan Cut and Cover Conduit on Colorado River Aqueduct (CRA)

In areas where a Metropolitan cut and cover conduit is exposed, the following guidelines apply:

A. No vehicle or equipment shall operate over or cross the conduit when the cover is less than 3 feet.

B. Track-type dozer with a gross vehicle weight of 12,000 lbs or less may be used over the conduit when the cover is a minimum of 3 feet.

C. Wheeled vehicles with a gross vehicle weight of 8,000 lbs or less may operate over the conduit when the cover is a minimum of 4 feet.

D. Tracked dozer or wheeled vehicle should be used to push material over the conduit from the side.

E. Tracked dozer or wheeled vehicle should gradually increase cover on one side of the conduit and then cross the conduit and increase cover on the other side of the conduit. The cover should be increased on one side of the conduit until a maximum of 2 feet of fill has been placed. The cover over the conduit is not allowed to be more than 2 feet higher on one side of the conduit than on the other side.

F. The cover should be gradually increased over the conduit until the grade elevations have been restored.

13.0 Piles

13.1 Impacts on Metropolitan Pipelines

Pile support for structures could impose lateral, vertical and seismic loads on Metropolitan's pipelines. Since the installation of piles could also cause settlement of Metropolitan pipelines, a settlement and/or lateral deformation study may be required for pile installations within 50 feet of Metropolitan's pipelines. Metropolitan may require additional information per its Geo-technical Guidelines for pile installation. Please contact Metropolitan's Substructures Team for a copy of the Geotechnical Guidelines.

13.2 Permanent Cast-in-place Piles

Permanent cast-in-place piles must be constructed so that down drag forces of the pile do not act on Metropolitan's pipeline. The pile must be designed so that down drag forces are not developed from the ground surface to springline of Metropolitan's pipeline.

Permanent cast-in-place piles shall not be placed closer than 5 feet from the edge of Metropolitan's pipeline. Metropolitan may require additional information per its Geo-technical Guidelines for pile installation. Please contact Metropolitan's Substructures Team for a copy of the Geotechnical Guidelines.

14.0 Protective Slabs for Road Crossings Over Metropolitan Pipelines

Protective slabs must be permanent cast-in-place concrete protective slabs configured in accordance with Drawing SK-1 (See Figure 2 on Page 22).

The moments and shear for the protective slab may be derived from the American Association of State Highway and Transportation Officials (AASHTO). The following requirements apply:

A. The concrete must be designed to meet the requirements of AASHTO

B. Load and impact factors must be in accordance with AASHTO. Accepted methods of analysis must be used.

C. The protective slab design must be stamped and signed by a California registered civil or structural engineer and submitted to Metropolitan with supporting calculations for review and approval.

Existing protective slabs that need to be lengthened can be lengthened without modification, provided the cover and other loading have not been increased.

15.0 Blasting

At least 90 days prior to the start of any drilling for rock excavation blasting, or any blasting in the vicinity of Metropolitan's facilities, a site-specific blasting plan must be submitted to Metropolitan for review and approval. The plan must consist of, but not be limited to, hole diameters, timing sequences, explosive weights, peak particle velocities (PPV) at Metropolitan pipelines/structures, and their distances to blast locations. The PPV must be estimated based on a site-specific power law equation. The power law equation provides the peak particle velocity versus the scaled distance and must be calibrated based on measured values at the site.

16.0 Metropolitan Plan Review Costs, Construction Costs and Billing

16.1 Plan Review Costs

Metropolitan plan reviews requiring 8 labor hours or less are generally performed at no cost to the project proponent. Metropolitan plan reviews requiring more than 8 labor hours must be paid by the project proponent, unless the project proponent has superior rights at the project area. The plan review will include a written response detailing Metropolitan's comments, requirements, and/or approval.

A deposit of funds in the amount of the estimated cost and a signed letter agreement will be required from the project proponent before Metropolitan begins or continues a detailed engineering plan review that exceeds 8 labor hours.

16.2 Cost of Modification of Facilities Performed by Metropolitan

Cost of modification work conducted by Metropolitan will be borne by the project proponent, when Metropolitan has paramount/prior rights at the subject location.

Metropolitan will transmit a cost estimate for the modification work to be performed (when it has paramount/prior rights) and will require that a deposit, in the amount of the estimate, be received before the work will be performed.

16.3 Final Billing

Final billing will be based on the actual costs incurred, including engineering plan review, inspection, materials, construction, and administrative overhead charges calculated in accordance with Metropolitan's standard accounting practices. If the total cost is less than the deposit, a refund will be made; however, if the cost exceeds the deposit, an invoice for the additional amount will be forwarded for payment.

17.0 Street Vacations and Reservation of Easements for Metropolitan

A reservation of an easement is required when all or a portion of a public street where Metropolitan facilities are located is to be vacated. The easement must be equal to the street width being vacated or a minimum 40 feet. The reservation must identify Metropolitan as a "public entity" and not a "public utility," prior to recordation of the vacation or tract map. The reservation of an easement must be submitted to Metropolitan for review prior to final approval.

18.0 Metropolitan Land Use Guidelines

If you are interested in obtaining permission to use Metropolitan land (temporary or long term), a Land Use Form must be completed and submitted to Metropolitan for review and consideration. A nonrefundable processing fee is required to cover Metropolitan's costs for reviewing your request. Land Use Request Forms can be found at:

http://mwdh2o.com/PDF_Doing_Your_Business/4.7.1_Land_Use_Request_form_revised.pdf

The request should be emailed to RealEstateServices@mwdh2o.com,or contact the Real Property Development and Management (RPDM) Group at (213) 217-7750.

After the initial application form has been submitted, Metropolitan may require the following in order to process your request:

A. A map indicating the location(s) where access is needed, and the location & size (height, width and depth) of any invasive subsurface activity (boreholes, trenches, etc.).

B. The California Environmental Quality Act (CEQA) document(s) or studies that have been prepared for the project (e.g., initial study, notice of exemption, Environmental Impact Report (EIR), Mitigated Negative Declaration (MND), etc.).

C. A copy of an ACORD insurance certification naming Metropolitan as an additional insured, or a current copy of a statement of self-insurance.

D. Confirmation of the legal name of the person(s) or entity(ies) that are to be named as the permittee(s) in the entry permit.

E. Confirmation of the purpose of the land use.

F. The name of the person(s) with the authority to sign the documents and any specific signature title block requirements for that person or any other persons required to sign the document (i.e., legal counsel, Board Secretary/Clerk, etc.).

G. A description of any vehicles that will have access to the property. The exact make or model information is not necessary; however, the general vehicle type, expected maximum dimensions (height, length, width), and a specific maximum weight must be provided.

Land use applications and proposed use of the property must be compatible with Metropolitan's present and/or future use of the property. Any preliminary review of your request by Metropolitan shall not be construed as a promise to grant any property rights for the use of Metropolitan's property.

19.0 Compliance with Environmental Laws and Regulations

As a public agency, Metropolitan is required to comply with all applicable environmental laws and regulations related to the activities it carries out or approves. Consequently, project plans, maps, and other information must be reviewed to determine Metropolitan's obligations pursuant to state and federal environmental laws and regulations, including, but not limited to:

A. California Environmental Quality Act (CEQA) (Public Resources Code 21000-21177) and the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 1500-15387)

B. Federal Endangered Species Act (ESA) of 1973, 16 U.S.C. §§ 1531, et seq.

C. California Fish and Game Code Sections 2050-2069 (California ESA)

D. California Fish and Game Code Section 1602

E. California Fish and Game Code Sections 3511, 4700, 5050 and 5515 (California fully protected species)

F. Federal Migratory Bird Treaty Act (MBTA), 16 U.S.C. §§ 703-712

G. Federal Clean Water Act (including but not limited to Sections 404 and 401) 33 U.S.C. §§ 1342, 1344)

H. Porter Cologne Water Quality Control Act of 1969, California Water Code §§ 13000-14076.

I. Title 22, California Code of Regulations, Chapter 16 (California Waterworks Standards), Section 64572 (Water Main Separation)

Metropolitan may require the project applicant to pay for any environmental review, compliance and/or mitigation costs incurred to satisfy such legal obligations.

20.0 Paramount Rights / Metropolitan's Rights within Existing Rights-of-Way

Facilities constructed within Metropolitan's rights-of-way shall be subject to the paramount right of Metropolitan to use its rights-of-way for the purpose for which they were acquired. If at any time Metropolitan or its assigns should, in the exercise of their rights, find it necessary to remove or relocate any facilities from its rights-of-way, such removal and replacement or relocation shall be at the expense of the owner of the facility.

21.0 Disclaimer and Information Accuracy

Metropolitan assumes no responsibility for the accuracy of the substructure information herein provided. The user assumes responsibility for verifying substructure locations before excavating and assumes all liability for damage to Metropolitan's facilities as a result of such excavation. Additionally, the user is cautioned to conduct surveys and other field investigations as you may deem prudent, to assure that your project plans are correct. The relevant representative from Metropolitan must be called at least two working days, before any work activity in proximity to Metropolitan's facilities.

It generally takes 30 days to review project plans and provide written responses. Metropolitan reserves the right to modify requirements based on case-specific issues and regulatory developments.

Table 1: General Guidelines for Pipeline Separation between Metropolitan's Pipeline[1] and Sanitary Sewer[2] or Hazardous Fluid Pipeline[3]

Pipeline Crossings	Metropolitan requires that sanitary sewer and hazardous fluid pipelines that cross Metropolitan's pipelines have special pipe construction (no joints) **and** secondary containment[4]. This is required for the full width of Metropolitan's rights-of-way or within 10 feet tangent to the outer edges of Metropolitan's pipeline within public streets. Additionally, sanitary sewer and hazardous fluid pipelines crossing Metropolitan's pipelines must be perpendicular and maintain a minimum 1-foot vertical clearance between the top and the bottom of Metropolitan's pipeline and the pipe casing. These requirements apply to all sanitary sewer crossings regardless if the sanitary sewer main is located below or above Metropolitan's pipeline.
Parallel Pipeline	Metropolitan generally does not permit the installation of longitudinal pipelines along its rights-of-way. Within public streets, Metropolitan requires that all parallel sanitary sewer, hazardous fluid pipelines and/or non-potable utilities be located a minimum of 10 feet from the outside edges of Metropolitan's pipelines. When 10-foot horizontal separation criteria cannot be met, longitudinal pipelines require special pipe construction (no joints) **and** secondary containment[4].
Sewer Manhole	Sanitary sewer manholes are not allowed within Metropolitan's rights-of-way. Within public streets, Metropolitan requests manholes parallel to its pipeline be located a minimum of 10 feet from the outside edges of its pipelines. When 10 foot horizontal separation criteria cannot be met, the structure must have secondary containment[5].

Notes:

[1] *Separation distances are measured from the outer edges of each pipe.*

[2] *Sanitary sewer requirements apply to all recycled water treated to less than disinfected tertiary recycled water (disinfected secondary recycled water or less).* Recycled water definitions are included in Title 22, California Code of Regulations, Chapter 3 (Water Recycling Criteria), Section 60301.

[3] *Hazardous fluids include e.g., oil, fuels, chemicals, industrial wastes, wastewater sludge, etc.*

[4] *Secondary Containment for Pipeline - Secondary containment consists of a continuous pipeline sleeve (no joints). Examples acceptable to Metropolitan include welded steel pipe with grout in annular space and cathodic protection (unless coated with non-conductive material) and High Density Polyethylene (HDPE) pipe with fusion-welded joints.*

[5] *Secondary Containment for Structures – Secondary containment consists of external HDPE liner or other approved method.*

Table 2: General Guidelines for Pipeline Separation between Metropolitan's Pipeline[1] and Storm Drain and/or Disinfected Tertiary Recycled Water[2]

Pipeline Crossings	Metropolitan requires crossing pipelines to be special pipe construction (no joints) or have secondary containment[3] within 10-feet tangent to the outer edges of Metropolitan's pipeline. Additionally, pipelines crossing Metropolitan's pipelines must be perpendicular and maintain a minimum 1-foot vertical clearance.
Parallel Pipeline	Metropolitan generally does not permit the installation of longitudinal pipelines along its rights-of-way. Within public streets, Metropolitan requests that all parallel pipelines be located a minimum of 10 feet from the outside edges of Metropolitan's pipelines. When 10-foot horizontal separation criteria cannot be met, special pipe construction (no joints) or secondary containment[3] are required.
Storm Drain Manhole	Permanent utility structures (e.g., manhole. catch basin, inlets) are not allowed within Metropolitan's rights-of-way. Within public streets, Metropolitan requests all structures parallel to its pipeline be located a minimum of 10 feet from the outside edges of its pipelines. When 10 foot horizontal separation criteria cannot be met, the structure must have secondary containment[4].

Notes:

[1] *Separation distances are measured from the outer edges of each pipe.*

[2] *Disinfected tertiary recycled water as defined* in Title 22, California Code of Regulations, Chapter 3 (*Water Recycling Criteria*), Section 60301.

[3] *Secondary Containment for Pipeline - Secondary containment consists of a continuous pipeline sleeve (no joints). Examples acceptable to Metropolitan include welded steel pipe with grout in annular space and cathodic protection (unless coated with non-conductive material) and High Density Polyethylene (HDPE) pipe with fusion-welded joints.*

[4] *Secondary Containment for Structures – Secondary containment consists of external HDPE liner or other approved method.*

Table 3: General Guidelines for Pipeline Separation[1] between Metropolitan's Pipeline and Recycled Water[2,4] Irrigations

Pressurized recycled irrigation mainlines	• Crossings - must be perpendicular and maintain a minimum 1-foot vertical clearance. Crossing pressurized recycled irrigation mainlines must be special pipe construction (no joints) or have secondary containment[3] within 10-feet tangent to the outer edges of Metropolitan's pipeline. • Longitudinal - must maintain a minimum 10-foot horizontal separation and route along the perimeter of Metropolitan's rights-of-way where possible.
Intermittently Energized Recycled Water Irrigation System Components	• Crossings - must be perpendicular and maintain a minimum 1-foot vertical clearance. Crossing irrigation laterals within 5-feet tangent to the outer edges of Metropolitan's pipeline must be special pipe construction (no joints) or have secondary containment[3]. • Longitudinal – must maintain a minimum 5-foot horizontal separation between all intermittently energized recycled water irrigation system components (e.g. irrigation lateral lines, control valves, rotors) and the outer edges of Metropolitan's pipeline. Longitudinal irrigation laterals within 5-feet tangent to the outer edges of Metropolitan's pipeline must be special pipe construction (no joints) or have secondary containment[3].
Irrigation Structures	Irrigation structures such as meters, pumps, control valves, etc. must be located outside of Metropolitan's rights-of-way.
Irrigation spray rotors near Metropolitan's aboveground facilities	Irrigation spray rotors must be located a minimum of 20-foot from any Metropolitan above ground structures with the spray direction away from these structures. These rotors should be routinely maintained and adjusted as necessary to ensure no over-spray into 20-foot clear zones.
Irrigations near open canals and aqueducts	Irrigation with recycled water near open canals and aqueducts will require a setback distance to be determined based on site-specific conditions. Runoff of recycled water must be contained within an approved use area and not impact Metropolitan facilities. Appropriate setbacks must also be in place to prevent overspray of recycled water impacting Metropolitan's facilities.

Notes:

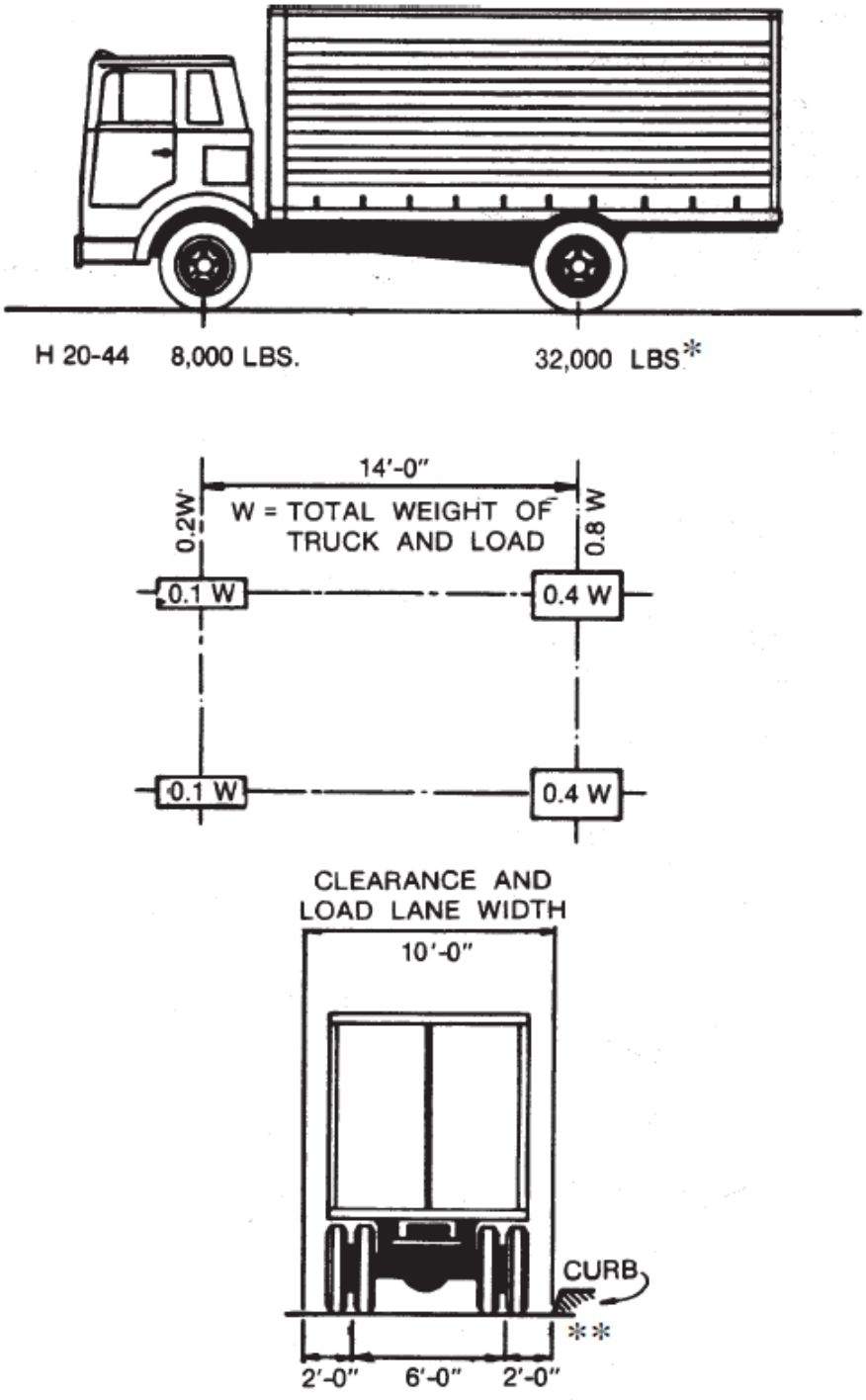
[1] *Separation distances are measured from the outer edges of each pipe.*

[2] *Requirements for recycled water irrigation apply to all levels of treatment of recycled water for non-potable uses.* Recycled water definitions are included in Title 22, California Code of Regulations, Chapter 3 (*Water Recycling Criteria*), Section 60301.

[3] *Secondary Containment for Pipeline - Secondary containment consists of a continuous pipeline sleeve (no joints). Examples acceptable to Metropolitan include welded steel pipe with grout in annular space and cathodic protection (unless coated with non-conductive material) and High Density Polyethylene (HDPE) pipe with fusion-welded joints.*

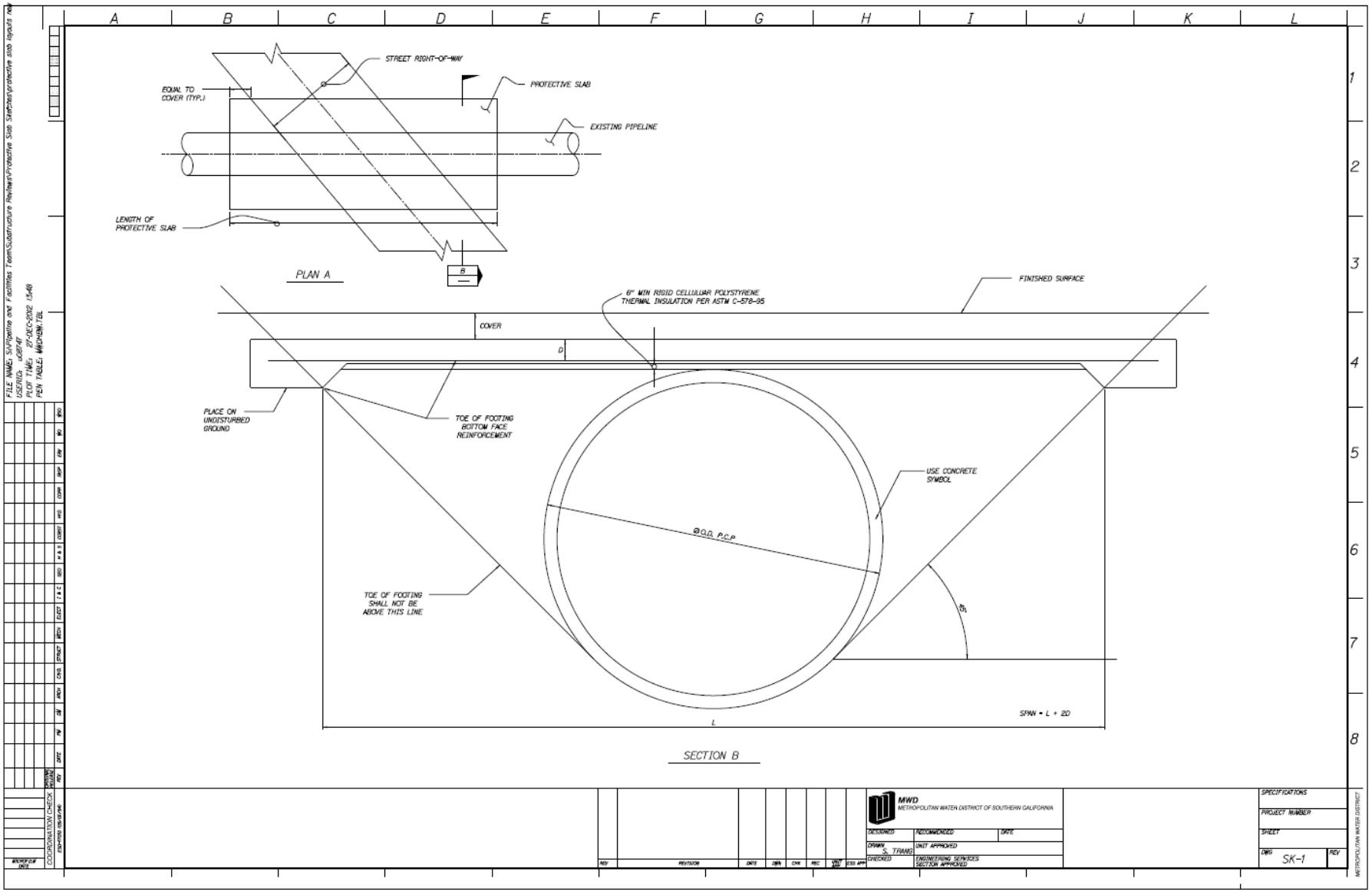
[4] *Irrigation with recycled water shall not be applied directly above Metropolitan's treated water pipelines.*

Figure 1: AASHTO H-20 Loading



Note: The H loadings consist of a two-axle truck or the corresponding lane loadings as illustrated above. The H loadings are designated "H" followed by a number indicating the gross weight in tons of the standard truck.

Figure 2: Drawing SK-1



Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, CA 92572-8300

Notice of Preparation

Date:	**December 12, 2023**
To:	**State Clearinghouse; Responsible and Trustee Agencies; and Other Interested Parties**
Subject:	**Re-Issued Notice of Preparation of an Environmental Impact Report**
Project:	**Lake Skinner Regional Water Transmission System (formerly *EM-11 Transmission Pipeline and Pump Station Project*)**
Lead Agency:	**Eastern Municipal Water District**
SCH:	**2022070445**

Eastern Municipal Water District (District) intends to prepare an Environmental Impact Report (EIR) for the proposed Lake Skinner Regional Water Transmission System Project (Project), which was formerly called the *EM-11 Transmission Pipeline and Pump Station Project*. A Notice of Preparation (NOP) was previously circulated for the EM-11 Transmission Pipeline and Pump Station Project in July 2022. The current Project includes similar components and objectives as the previous version; however, the locations of the Project components have changed and therefore, this NOP is being recirculated.

The District serves as Lead Agency pursuant to the California Environmental Quality Act (CEQA). The District invites written comments on the scope of the environmental analysis and identification of potential environmental issues to be included in the EIR.

Notice of Preparation: This Notice of Preparation (NOP) has been sent to the Office of Planning and Research, Responsible and Trustee agencies, organizations, and interested parties. The purpose of the NOP is to inform recipients that the District is beginning preparation of an EIR and to solicit information that will be helpful in the environmental review process. This notice includes information on how to provide comments to the District and a description of the Project.

Comments: The District is requesting input from CEQA Responsible and Trustee agencies, other public agencies with jurisdiction by law over resources potentially affected by the proposed Project, and public input regarding the scope and content of environmental information to be included in the EIR. Agency responses should identify the issues to be considered in the EIR, including significant environmental issues, alternatives, mitigation measures, and whether the responding agency will be a responsible or trustee agency, and the basis for that determination. Due to the limits mandated by State law, your response must be sent at the earliest possible date but postmarked no later than January 25, 2024. Please send your comments to:

Eastern Municipal Water District
Attn: Joseph Broadhead
2270 Trumble Road
Perris, CA 92570

Location of the Proposed Project: The proposed Project would be located within unincorporated areas of Riverside County, east of the cities of Menifee and Murrieta (Figure 1, *Regional Location*, and Figure 2, *Project Alignment*). The transmission pipelines would extend in an overall northern direction from The Metropolitan District of California (Metropolitan) Robert A. Skinner Water Treatment Plant (Skinner WTP) approximately 14 miles through the southern Perris Valley area to the community of Winchester. The new booster pump station (BPS) and turnout would be sited near the intersection of Auld Road and Leon Road, near the District's existing EM-17 BPS and turnout and approximately two miles west of the Skinner WTP.

Overview of the Proposed Project: The District is proposing the Project to assist in expansion of its treated water supply portfolio to meet demands resulting from long-term projected growth. The Project includes construction and operation of three main components: (1) a new Metropolitan-owned water service connection (also referred to as a turnout) to transfer treated water deliveries from Metropolitan's Skinner WTP to the District; (2) a new BPS that would connect to the turnout to pump water to the District's service area; and (3) new transmission pipelines to deliver water from Skinner WTP to the District's service area. Collectively, these components comprise the Project and would be sized to meet the buildout demand condition of 140 cubic feet per second (cfs) of additional treated water supplies.

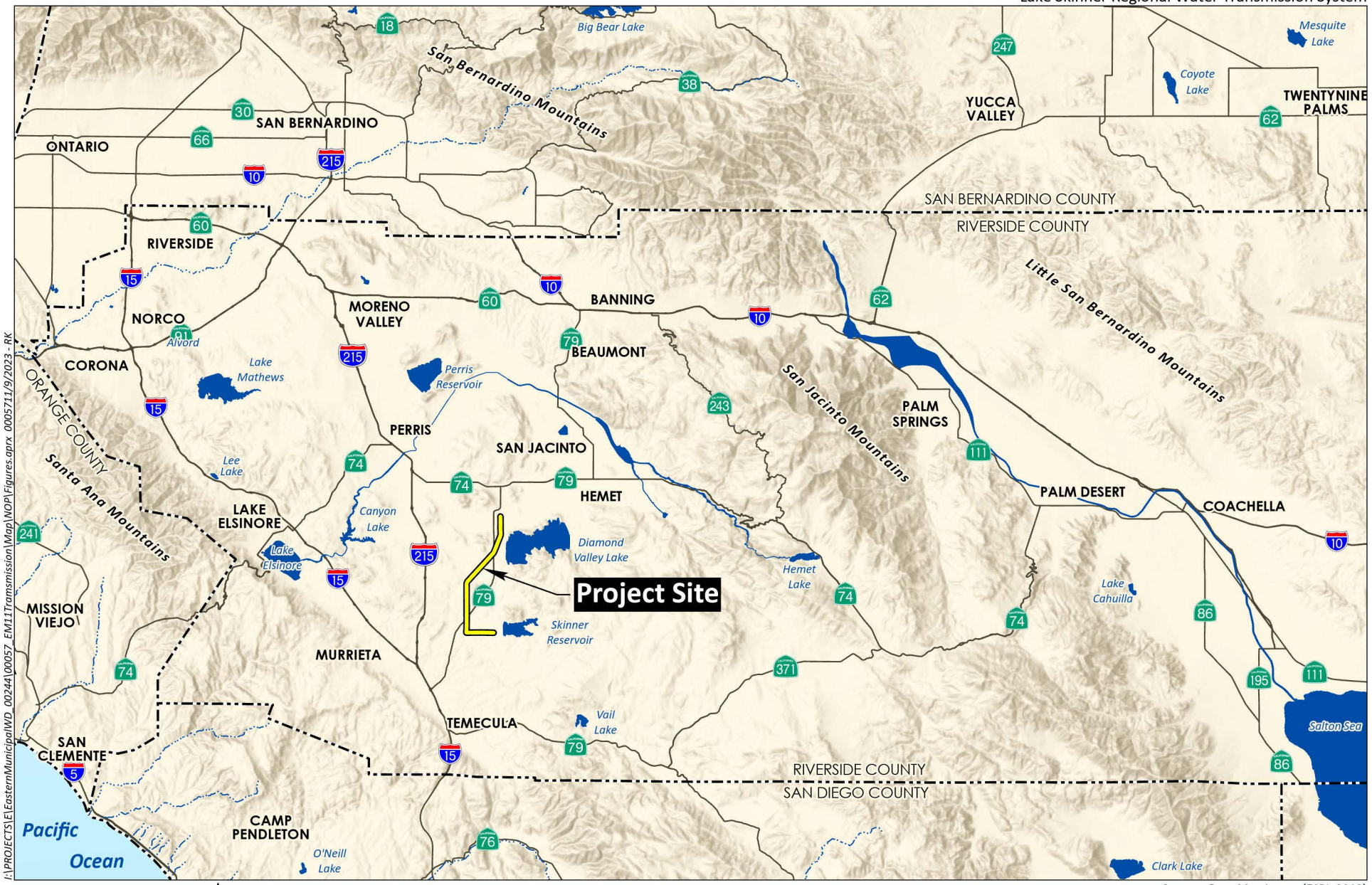
The Project components would be implemented in four phases. The first phase, which would be online by 2030, includes construction of the turnout, construction of the BPS with a capacity of 40 cubic feet per second (cfs), and relining existing 49-inch and 43-inch pipeline from the BPS to Fowler Drive (approximately 3.6 miles in length). The second phase, which would be online by 2035, includes relining the existing 49-inch pipeline from Fowler Drive to Holland Road (approximately 3.2 miles in length). The third phase, which would be online by 2040, includes installation of a new 60-inch pipeline from Holland Road to Simpson Road (approximately 2.6 miles in length). The fourth phase, which would be online by 2045, includes the installation of a new 72-inch pipeline from the Skinner WTP to the turnout (approximately 2.0 miles in length), installation of new 60-inch parallel pipeline from the BPS to Fowler Drive (approximately 3.6 miles in length), and installation of new 48-inch parallel pipe from Fowler Drive to Holland Road (approximately 2.2 miles in length). Additional future improvements include increasing the flow of the pump station to 80 cfs in 2045 and 140 cfs at full buildout.

Potential Environmental Effects of the Proposed Project: In accordance with Section 15126 of the CEQA Guidelines, the EIR will assess the physical changes to the environment that would likely result from the construction and operation of the Project, including direct, indirect, and cumulative impacts and growth-inducing impacts. The EIR will provide an assessment of impacts for facilities and activities associated with Project implementation (CEQA Guidelines Section 15161). The analysis in the EIR will be programmatic in nature due to the phasing of the Project and the current availability of Project-specific details.

The District has determined that the proposed Project may have the potential to significantly impact air quality, biological resources, cultural resources and tribal cultural resources, energy, geology and soils, greenhouse gas emissions, hydrology and water quality, and noise. These issue areas will be evaluated in detail in the Draft EIR. It is anticipated that all other issue areas will be discussed in the *Environmental Effects Found Not to be Significant* section of the Draft EIR. The EIR will identify mitigation measures if necessary and feasible to reduce potentially significant impacts of the proposed Project. The EIR will also discuss alternatives to the proposed Project, including the CEQA-required "No Project" alternative.

Attachments:
Figure 1: Regional Location
Figure 2: Project Alignment

Lake Skinner Regional Water Transmission System



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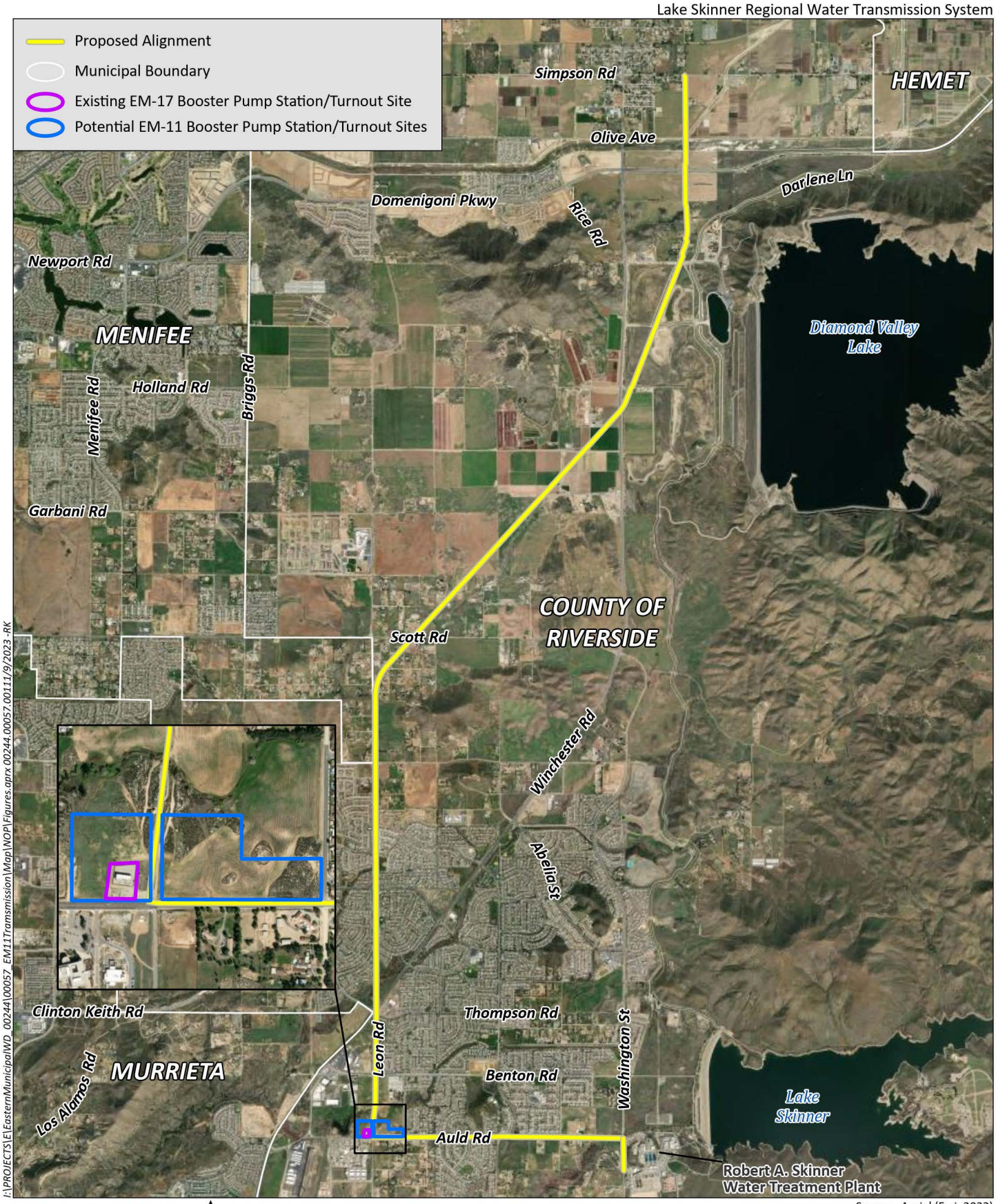
Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1

Lake Skinner Regional Water Transmission System



I:\PROJECTS\E\EasternMunicipalWD_00244\00057_EM11Tramsmission\Map\NOP\Figures.aprx 00244.00057.00111/9/2023 -RK

0 5,600 Feet

Source: Aerial (Esri, 2022)

HELIX Environmental Planning

Project Alignment

Figure 2

REQUEST FOR BID

ASBESTOS ABATEMENT AND DEMOLITION

On property located at: 26678 Hostettler Road, Corona CA 92883

The Riverside County Flood Control and Water Conservation District (District) is seeking qualified contractors to complete the necessary asbestos abatement single-family dwelling and demolition at 26678 Hostettler Road, Corona, CA 92883. This is a public works project subject to compliance monitoring and enforcement by the California Department of Industrial Relations.

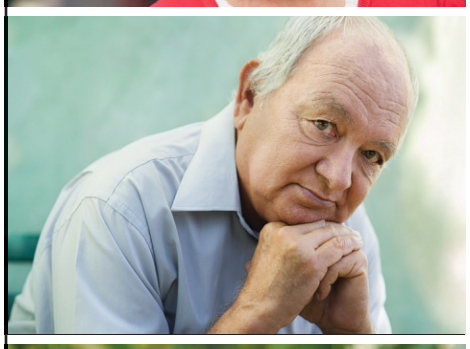
The Request for Bid (RFB) details, including submittal requirements, can be viewed and downloaded from the Districts website at: https://rcflood.org under Business/Non-Construction Bids.

Respondents must attend a mandatory bidder conference at 9:00 am on December 19th, 2023 and submit their final proposals on January 10, 2024.

Riverside County Flood Control and Water Conservation District
1995 Market Street, Riverside CA 92501

Attn: Samuel Cox, Buyer II
RE: RFB FCARC-00180
Asbestos Abatement and Demolition







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An obituary also serves to notify your loved one's distant family, their friends, old classmates that have lost touch, and people they've worked with over the years. These are some of the people who, without a published obituary, would not know of the loss or about the services.

No matter their profession or walk of life, everyone has a story to tell. Sharing your loved one's story in an obituary in The Press-Enterprise and online at www.pressenterprise.com preserves heir memory.

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Notice of Preparation of an Environmental Impact Report Lake Skinner Regional Water Transmission System Project

Eastern Municipal Water District (District) intends to prepare an Environmental Impact Report (EIR) for the proposed Lake Skinner Regional Water Transmission System Project (Project), which was formerly called the EM 11 Transmission Pipeline and Pump Station Project. A Notice of Preparation (NOP) was previously circulated for the EM-11 Transmission Pipeline and Pump Station Project in July 2022. The current Project includes similar components and objectives as the previous version; however, the locations of the Project components have changed and therefore, this NOP is being recirculated.

The District serves as Lead Agency pursuant to the California Environmental Quality Act (CEQA). The District invites written comments on the scope of the environmental analysis and identification of potential environmental issues to be included in the EIR.

Notice of Preparation: This Notice of Preparation (NOP) has been sent to the Office of Planning and Research, Responsible and Trustee agencies, organizations, and interested parties. The purpose of the NOP is to inform recipients that the District is beginning preparation of an EIR and to solicit information that will be helpful in the environmental review process. This notice includes information on how to provide comments to the District and a description of the Project.

Comments: The District is requesting input from CEQA Responsible and Trustee agencies, other public agencies with jurisdiction by law over resources potentially affected by the proposed Project, and public input regarding the scope and content of environmental information to be included in the EIR. Agency responses should identify the issues to be considered in the EIR, including significant environmental issues, alternatives, mitigation measures, and whether the responding agency will be a responsible or trustee agency, and the basis for that determination. Due to the limits mandated by State law, your response must be sent at the earliest possible date but postmarked no later than January 25, 2024. Please submit written comments by mail to Eastern Municipal Water District, Attn: Joseph Broadhead, 2270 Trumble Road, Perris, CA 92570.

Project Location: The proposed Project would be located within unincorporated areas of Riverside County, east of the cities of Menifee and Murrieta. The transmission pipelines would extend in an overall northern direction from The Metropolitan District of California (Metropolitan) Robert A. Skinner Water Treatment Plant (Skinner WTP) approximately 14 miles through the southern Perris Valley area to the community of Winchester. The new booster pump station (BPS) and turnout would be sited near the intersection of Auld Road and Leon Road, near the District's existing EM-17 BPS and turnout and approximately two miles west of the Skinner WTP.

Project Description: The District is proposing the Project to assist in expansion of its treated water supply portfolio to meet demands resulting from long-term projected growth. The Project includes construction and operation of three main components: (1) a new Metropolitan-owned water service connection (also referred to as a turnout) to transfer treated water deliveries from Metropolitan's Skinner WTP to the District; (2) a new BPS that would connect to the turnout to pump water to the District's service area; and (3) new transmission pipelines to deliver water from Skinner WTP to the District's service area. Collectively, these components comprise the Project and would be sized to meet the buildout demand condition of 140 cubic feet per second (cfs) of additional treated water supplies.

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The District has determined that the proposed Project may have the potential to significantly impact air quality, biological resources, cultural resources and tribal cultural resources, energy, geology and soils, greenhouse gas emissions, hydrology and water quality, and noise. These issue areas will be evaluated in detail in the Draft EIR. It is anticipated that all other issue areas will be discussed in the Environmental Effects Found Not to be Significant section of the Draft EIR. The EIR will identify mitigation measures if necessary and feasible to reduce potentially significant impacts of the proposed Project. The EIR will also discuss alternatives to the proposed Project, including the CEQA-required "No Project" alternative.

Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, CA 92572-8300

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Lake Skinner Regional Water Transmission System (formerly EM-11)

Summary

SCH Number	2022070445
Lead Agency	Eastern Municipal Water District (EMWD)
Document Title	Lake Skinner Regional Water Transmission System (formerly EM-11)
Document Type	NOP - Notice of Preparation of a Draft EIR
Received	12/12/2023
Present Land Use	Various
Document Description	Eastern Municipal Water District (District) intends to prepare an Environmental Impact Report (EIR) for the proposed Lake Skinner Regional Water Transmission System Project (Project), which was formerly called the EM-11 Transmission Pipeline and Pump Station Project. A Notice of Preparation (NOP) was previously circulated for the EM-11 Transmission Pipeline and Pump Station Project in July 2022. The current Project includes similar components and objectives as the previous version; however, the locations of the Project components have changed and therefore, this NOP is being recirculated.

Contact Information

Name	Joe Broadhead
Agency Name	EMWD
Job Title	Principal Water Resources Specialist
Contact Types	Lead/Public Agency
Address	2270 Trumble Road Perris, CA 92572
Phone	(951) 928-3777 ext. 4545
Email	broadhej@emwd.org

Location

Coordinates	33°35'1"N 117°7'7"W

Counties	Riverside
Regions	Countywide
Cross Streets	Auld Rd/Leon Rd
Zip	92596
Parcel #	Various
State Highways	CA-79
Railways	N/A
Airports	N/A
Schools	Numerous
Waterways	Lake Skinner

Notice of Completion

State Review Period Start	12/12/2023
State Review Period End	1/25/2024
State Reviewing Agencies	California Air Resources Board (ARB), California Department of Parks and Recreation, California Department of Toxic Substances Control (DTSC), California Department of Transportation, District 8 (DOT), California Department of Transportation, Division of Aeronautics (DOT), California Department of Transportation, Division of Transportation Planning (DOT), California Department of Water Resources (DWR), California Natural Resources Agency, California Regional Water Quality Control Board, Santa Ana Region 8 (RWQCB), California State Lands Commission (SLC), Office of Historic Preservation, State Water Resources Control Board, Division of Water Quality, State Water Resources Control Board, Division of Water Rights, State Water Resources Control Board, Divison of Financial Assistance, California Native American Heritage Commission (NAHC), California Department of Fish and Wildlife, Inland Deserts Region 6 (CDFW)
State Reviewing Agency Comments	California Native American Heritage Commission (NAHC), California Department of Fish and Wildlife, Inland Deserts Region 6 (CDFW)
Development Types	Other (Pump Station, pipelines)
Local Actions	Site Plan
Project Issues	Air Quality, Biological Resources, Drainage/Absorption, Energy, Geology/Soils, Greenhouse Gas Emissions, Growth Inducement, Hydrology/Water Quality, Noise, Transportation, Tribal Cultural Resources, Vegetation, Wetland/Riparian
Public Review Period Start	12/12/2023
Public Review Period End	1/25/2024

Attachments

Draft Environmental Document [Draft IS, NOI_NOA_Public notices, OPR Summary Form, Appx,]	Lake Skinner NOP PDF 2325 K
Notice of Completion [NOC] Transmittal form	Lake Skinner_NOC_form PDF 235 K
State Comment Letters [Comments from state reviewing agencies]	2022070445_CDFW comment PDF 639 K 2022070445_NAHC Comment PDF 413 K

Disclaimer: The Governor's Office of Land Use and Climate Innovation (LCI) accepts no responsibility for the content or accessibility of these documents. To obtain an attachment in a different format, please contact the lead agency at the contact information listed above. For more information, please visit LCI's Accessibility Site.

From: Stanley Heaton
To: Broadhead, Joseph
Cc: neilj.dillon@outlook.com
Subject: RE: Proposed Leon Road Facility
Date: Wednesday, January 10, 2024 2:50:42 PM

CAUTION: This email originated outside the District. Do not click links or open attachments unless you are expecting this email and know the content is safe. If in doubt, delete unsolicited email or click the "Report Phish" button to have potentially malicious items analyzed.

Joseph,

Thank you for providing the Notice of Preparation for the Lake Skinner Regional Water transmission System.

We represent private land owner projects adjacent to Leon Road and Auld Road. Please provide any preliminary plans for the proposed waterline alignments near the existing EM-17 booster pump station at Leon Road and along Auld Road when available.

Thank you for your assistance.

Sincerely,
Temecula Engineering Consultants, Inc.
By: Stanley D. Heaton, PE, QSD, QSP, President
29377 Rancho California Rd., Ste. 202, Temecula, CA 92591
O: 951-676-1018
F: 951-676-2294
E: stan.heaton@verizon.net

From: Stanley Heaton [mailto:stan.heaton@verizon.net]
Sent: Thursday, December 14, 2023 2:41 PM
To: 'broadhej@emwd.org'
Cc: neilj.dillon@outlook.com
Subject: Proposed Leon Road Facility

Joseph,

We represent the Saba Family Trust and hereby request a copy of the water line plan that is proposed for Leon Road between Auld Road and Benton Road that fronts their property.

Thank you for your assistance.

Sincerely,
Temecula Engineering Consultants, Inc.
By: Stanley D. Heaton, PE, QSD, QSP, President
29377 Rancho California Rd., Ste. 202, Temecula, CA 92591
O: 951-676-1018
F: 951-676-2294
E: stan.heaton@verizon.net

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

03-058-2022-002

January 16, 2024

[VIA EMAIL TO:broadhej@emwd.org]
Eastern Municipal Water District
Mr. Joseph Broadhead
P.O. Box 8300
Perris, CA 92572

Re: EM-11 Transmission Pipeline and Pump Station

Dear Mr. Joseph Broadhead,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the EM-11 Transmission Pipeline and Pump Station project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. For this reason, the ACBCI THPO requests the following:

*The presence of an approved Cultural Resource Monitor(s) during any ground disturbing activities (including archaeological testing and surveys). Should buried cultural deposits be encountered, the Monitor may request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer.

*The presence of an archaeologist that meets the Secretary of Interior's standards during any ground disturbing activities.

* There is a village site near the project area and there are tribal cultural resources present north of APE.

* Please send EIR when completed to ACBCI THPO Consulting email.

* Please send cultural reports, site records, and records search info associated with the new project area to ACBCI THPO Consulting.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760) 883-1134. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Clarissa Durand

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
T 760/699/6800 F 760/699/6924 WWW.AGUACALIENTE-NSN.GOV

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION



Claritsa Duarte
Cultural Resources Analyst
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
T 760/699/6800 F 760/699/6924 WWW.AGUACALIENTE-NSN.GOV

From: Tribal Historic Preservation Office
To: Broadhead, Joseph
Cc: Ann Brierty; Laura Chatterton; Joan Schneider
Subject: EMWD NOP Lake Skinner Regional Water Transmission
Date: Friday, January 19, 2024 2:51:25 PM
Attachments: EMWD Lake Skinner Regional Water Transmission Project MBMI AB 52 Response Letter 19Jan24.pdf

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CAUTION: This email originated outside the District. Do not click links or open attachments unless you are expecting this email and know the content is safe. If in doubt, delete unsolicited email or click the "Report Phish" button to have potentially malicious items analyzed.

The Morongo Band of Mission Indians (Tribe/MBMI) Tribal Historic Preservation Office received the Eastern Municipal Water Department (EMWD) letter regarding the above referenced project on December 20, 2023. The proposed Lake Skinner Regional Water Transmission Project (Project) is located within the ancestral territory and traditional use area of the Cahuilla and Serrano people of the Morongo Band of Mission Indians.

Tribal cultural resources are non-renewable resources and therefore of high importance to the Morongo Tribe, therefore, tribal participation (a.k.a. tribal monitors) is recommended during all ground disturbing activities. We look forward to working with the EMWD to protect these irreplaceable resources out of respect for ancestors of the Morongo people who left them there, and for the people of today and for generations to come.

Projects within this area are potentially sensitive for cultural resources regardless of the presence or absence of remaining surface artifacts and features. Our office requests to initiate government-to-government consultation under Assembly Bill (AB) 52 (California Public Resources Code § 21080.3.1).

Please see attached letter.

Respectfully,

Laura Chatterton
Cultural Resource Specialist
Tribal Historic Preservation Office
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA 92220
O: (951) 755.5256
M: (951) 663.7570

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TRIBAL HISTORIC PRESERVATION OFFICE

VIA ELECTRONIC MAIL

broadhej@emwd.org

Joseph Broadhead
Eastern Municipal Water Department
2270 Trumble Road
Perris, CA 92570

MORONGO BAND OF MISSION INDIANS
A SOVEREIGN NATION

January 19, 2024

RE: NOP EIR Lake Skinner Regional Water Transmission Project

The Morongo Band of Mission Indians (Tribe/MBMI) Tribal Historic Preservation Office received the Eastern Municipal Water Department (EMWD) letter regarding the above referenced project on December 20, 2023. The proposed Lake Skinner Regional Water Transmission Project (Project) is located within the ancestral territory and traditional use area of the Cahuilla and Serrano people of the Morongo Band of Mission Indians.

Tribal cultural resources are non-renewable resources and therefore of high importance to the Morongo Tribe, therefore, tribal participation (a.k.a. tribal monitors) is recommended during all ground disturbing activities. We look forward to working with the EMWD to protect these irreplaceable resources out of respect for ancestors of the Morongo people who left them there, and for the people of today and for generations to come.

Projects within this area are potentially sensitive for cultural resources regardless of the presence or absence of remaining surface artifacts and features. Our office requests to initiate government-to-government consultation under Assembly Bill (AB) 52 (California Public Resources Code § 21080.3.1) and requests the following from the EMWD to ensure meaningful consultation:

- Currently proposed Project design and Mass Grading Maps
- A records search conducted at the appropriate California Historical Resources Information System (CHRIS) center with at least a 1.0-mile search radius from the project boundary. If this work has already been done, please furnish copies of the cultural resource documentation (ArcMap Shapefiles, reports and site records) generated through this search so that we can compare and review with our records to begin productive consultation.
- Tribal participation (a.k.a. tribal monitors) during the pedestrian survey and testing, if this fieldwork has not already taken place. In the event that archaeological crews have completed this work, our office requests a copy of the current Phase I study or other cultural assessments (including the cultural resources inventory).
- Shapefiles of the Projects area of effect (APE)
- Geotechnical Report

This letter does not conclude consultation. Upon receipt of the requested documents the MBMI THPO may further provide recommendations and/or mitigation measures.

The lead contact for this Project is Bernadette Ann Brierty, Tribal Historic Preservation Officer (THPO). MBMI Cultural Resource Specialist Laura Chatterton, will be assisting the Tribe in the review of this project. Please do not hesitate to contact us at ABrierty@morongo-nsn.gov, THPO@morongo-nsn.gov, lchatterton@morongo-nsn.gov or (951) 663-2842, should you have any questions. The Tribe looks forward to meaningful government-to-government consultation with the EMWD.

Respectfully,



Bernadette Ann Brierty
Tribal Historic Preservation Officer
Morongo Band of Mission Indians

CC: Morongo THPO

12700 Pumarra Road – Banning, CA 92220 – (951) 755-5259 – Fax (951) 572-6004 – THPO@morongo-nsn.gov

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Boulevard, Suite C-220
Ontario, CA 91764
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

January 22, 2024
Sent via email

Joe Broadhead, Principal Water Resources Specialist
Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92572

Subject: Notice of Preparation of a Draft Environmental Impact Report
Lake Skinner Regional Water Transmission System Project
State Clearinghouse No. 2022070445

Dear Mr. Broadhead:

The California Department of Fish and Wildlife (CDFW) received a Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) from the Eastern Municipal Water District (District) for the Lake Skinner Regional Water Transmission System Project (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

CDFW is also submitting comments as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT LOCATION

The proposed Project is located adjacent to the Robert A. Skinner Water Treatment Plant and covers 14 miles through the southern Perris Valley area to the community of Winchester within unincorporated areas of Riverside County, east of the cities of Menifee and Murrieta. The site is located within the U.S. Geological Survey (USGS) 7.5-Winchester quadrangle; Section 5, Township 6 and 7 South, Range 2 West of the San Bernardino Base and Meridian (SBBM).

Additionally, the Project is in Criteria Cells 5778, 5677, 5572, 5575, 5479, 5174, and 5073 in the Subunit 5 (French Valley/Lower Sedco Hills) of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

PROJECT DESCRIPTION SUMMARY

The Project would consist of the construction and operation of three main components: (1) a new Metropolitan Water District (Metropolitan) water service connection (also referred to as a turnout) to transfer treated water deliveries from Metropolitan's Skinner Water Treatment Plant (WTP) to the District; (2) a new Booster Pump Station (BPS) that would connect to the turnout to pump water to the District's service area; and (3) new transmission pipelines to deliver water from Skinner WTP to the District's service area. Collectively, these components comprise the Project and would be sized to meet the buildout demand condition of 140 cubic feet per second (cfs) of additional treated water supplies.

The Project components would be implemented in four phases. The first phase, which would be online by 2030, includes construction of the turnout, construction of the BPS with a capacity of 40 cubic feet per second (cfs), and relining the existing 49-inch and 43-inch pipelines from the BPS to Fowler Drive (approximately 3.6 miles in length). The second phase, which would be online by 2035, includes relining the existing 49-inch pipeline from Fowler Drive to Holland Road (approximately 3.2 miles in length). The third phase, which would be online by 2040, includes installation of a new 60-inch pipeline from Holland Road to Simpson Road (approximately 2.6 miles in length). The fourth phase, which would be online by 2045, includes the installation of a new 72-inch pipeline from the Skinner WTP to the turnout (approximately 2.0 miles in length), installation of new 60-

inch parallel pipeline from the BPS to Fowler Drive (approximately 3.6 miles in length), and installation of new 48- inch parallel pipe from Fowler Drive to Holland Road (approximately 2.2 miles in length). Additional future improvements include increasing the flow of the pump station to 80 cfs in 2045 and 140 cfs at full buildout.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the District in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. The comments and recommendations are also offered to enable the CDFW to adequately review and comment on the proposed Project with respect to the Project's consistency with the MSHCP.

CDFW recommends that the forthcoming DEIR address the following:

Assessment of Biological Resources

Section 15125(c) of the CEQA Guidelines states that knowledge of the regional setting of a project is critical to the assessment of environmental impacts and that special emphasis should be placed on environmental resources that are rare or unique to the region. To enable CDFW staff to adequately review and comment on the Project, the DEIR should include a complete assessment of the flora and fauna within and adjacent to the Project footprint, with particular emphasis on identifying rare, threatened, endangered, and other sensitive species and their associated habitats.

CDFW recommends that the DEIR specifically include:

1. An assessment of the various habitat types located within the Project footprint, and a map that identifies the location of each habitat type. CDFW recommends that floristic, alliance- and/or association-based mapping and assessment be completed following *The Manual of California Vegetation*, second edition (Sawyer et al. 2009[2]). Adjoining habitat areas should also be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions.

2. A general biological inventory of the fish, amphibian, reptile, bird, and mammal species that are present or have the potential to be present within each habitat type onsite and within adjacent areas that could be affected by the Project. CDFW's

[2] Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A manual of California Vegetation, 2nd ed. California Native Plant Society Press, Sacramento, California. http://vegetation.cnps.org/

California Natural Diversity Database (CNDDB) in Sacramento should be contacted at (916) 322-2493 or CNDDB@wildlife.ca.gov or https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data 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, in the vicinity of the proposed Project.

CDFW's CNDDB is not exhaustive in terms of the data it houses, nor is it an absence database. CDFW recommends that it be used as a starting point in gathering information about the *potential presence* of species within the general area of the Project site.

3. A complete, *recent* inventory of rare, threatened, endangered, and other sensitive species located within the Project footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish & G. Code, § 3511). Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific/MSHCP surveys, completed by a qualified biologist and 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 CDFW and the U.S. Fish and Wildlife Service, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.

4. A thorough, recent, floristic-based assessment of special status plants and natural communities, following CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018[3]).

5. Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region (CEQA Guidelines § 15125[c]).

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3 CDFW, 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities, State of California, California Natural Resources Agency, Department of Fish and Wildlife: March 20, 2018 (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline)

6. A full accounting of all open space and mitigation/conservation lands within and adjacent to the Project.

Analysis of Direct, Indirect, and Cumulative Impacts to Biological Resources

The DEIR should provide a thorough discussion of the direct, indirect, and cumulative impacts expected to adversely affect biological resources as a result of the Project. To ensure that Project impacts to biological resources are fully analyzed, the following information should be included in the DEIR:

1. A discussion of potential impacts from lighting, noise, human activity (e.g., recreation), defensible space, and wildlife-human interactions created by zoning of development projects or other Project activities adjacent to natural areas, exotic and/or invasive species, and drainage. The latter subject should address Project-related changes on drainage patterns and water quality within, upstream, and downstream of the Project site, including: 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.

2. A discussion of potential indirect Project impacts on biological resources, including resources in areas adjacent to the Project footprint, such as nearby public lands (e.g., National Forests, State Parks, etc.), open space, adjacent natural habitats, riparian ecosystems, wildlife corridors, and any designated and/or proposed reserve or mitigation lands (e.g., preserved lands associated with a Natural Community Conservation Plan, or other conserved lands).

3. An evaluation of impacts to on-site and adjacent open space lands from both the construction of the Project and any long-term operational and maintenance needs.

4. A cumulative effects analysis developed as described under CEQA Guidelines section 15130. The DEIR should analyze the cumulative effects of the plan's land use designations, policies, and programs on the environment. Please include all potential direct and indirect Project related impacts to riparian areas, wetlands, vernal pools, alluvial fan habitats, wildlife corridors or wildlife movement areas, aquatic habitats, sensitive species and other sensitive habitats, open lands, open space, and adjacent natural habitats in the cumulative effects analysis. 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.

Alternatives Analysis

CDFW recommends the DEIR describe and analyze a range of reasonable alternatives to the Project that are potentially feasible, would "feasibly attain most of the basic objectives of the Project," and would avoid or substantially lessen any of the Project's significant effects (CEQA Guidelines § 15126.6[a]). The alternatives analysis should also evaluate a

"no project" alternative (CEQA Guidelines § 15126.6[e]).

Mitigation Measures for Project Impacts to Biological Resources

The DEIR should identify mitigation measures and alternatives that are appropriate and adequate to avoid or minimize potential impacts, to the extent feasible. The Lead Agency should assess all direct, indirect, and cumulative impacts that are expected to occur as a result of the implementation of the Project and its long-term operation and maintenance. When proposing measures to avoid, minimize, or mitigate impacts, CDFW recommends consideration of the following:

1. *Fully Protected Species*: Fully protected species may not be taken or possessed at any time (with the exception of certain projects set forth in SB 147, which was passed on July 10, 2023). Project activities described in the DEIR should be designed to completely avoid any fully protected species that have the potential to be present within or adjacent to the Project area. CDFW also recommends that the DEIR fully analyze potential adverse impacts to fully protected species due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. CDFW recommends that the District include in the analysis how appropriate avoidance, minimization, and mitigation measures will reduce indirect impacts to fully protected species.

2. *Sensitive Plant Communities*: CDFW considers sensitive plant communities to be imperiled habitats having both local and regional significance. Plant communities, alliances, and associations with a statewide ranking of S-1, S-2, S-3, and S-4 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by querying the CNDDB and are included in *The Manual of California Vegetation* (Sawyer et al. 2009). The DEIR should include measures to fully avoid and otherwise protect sensitive plant communities from Project-related direct and indirect impacts.

3. *California Species of Special Concern* (CSSC): CSSC status applies to animals generally not listed under the federal Endangered Species Act or the CESA, but which nonetheless are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. CSSCs should be considered during the environmental review process. CSSC that have the potential or have been documented to occur within or adjacent to the Project area, including, but not limited to: burrowing owl, California glossy snake, coast horned lizard, coastal California gnatcatcher, coastal whiptail, least Bell's vireo, Los Angeles pocket mouse, orange-throated whiptail, loggerhead shrike, red-diamond rattlesnake, Southern California legless lizard, San Bernardino kangaroo rat, western mastiff bat, western spadefoot toad, and western yellow bat.

4. *Mitigation*: CDFW considers adverse Project-related impacts to sensitive species and habitats to be significant to both local and regional ecosystems, and the DEIR should

include mitigation measures for adverse Project-related impacts to these resources. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, onsite habitat restoration and/or enhancement, and preservation should be evaluated and discussed in detail. Where habitat preservation is not available onsite, offsite land acquisition, management, and preservation should be evaluated and discussed in detail.

The DEIR should include measures to perpetually protect the targeted habitat values within mitigation areas from direct and indirect adverse impacts in order to meet mitigation objectives to offset Project-induced qualitative and quantitative losses of biological values. Specific issues that should be addressed include restrictions on access, proposed land dedications, long-term monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

If sensitive species and/or their habitat may be impacted from the Project, CDFW recommends the inclusion of specific mitigation in the DEIR. CEQA Guidelines section 15126.4, subdivision (a)(1)(8) states that formulation of feasible mitigation measures should not be deferred until some future date. The Court of Appeal in *San Joaquin Raptor Rescue Center* v. *County* of *Merced* (2007) 149 Cal.App.4th 645 struck down mitigation measures which required formulating management plans developed in consultation with State and Federal wildlife agencies after Project approval. Courts have also repeatedly not supported conclusions that impacts are mitigable when essential studies, and therefore impact assessments, are incomplete *(Sundstrom* v. *County* of *Mendocino* (1988) 202 Cal. App. 3d. 296; *Gentry* v. *County* of *Murrieta (1995)* 36 Cal. App. 4th 1359; *Endangered Habitat League, Inc.* v. *County* of *Orange* (2005) 131 Cal. App. 4th 777).

CDFW recommends that the DEIR specify mitigation that is roughly proportional to the level of impacts, in accordance with the provisions of CEQA (CEQA Guidelines, §§ 15126.4(a)(4)(B), 15064, 15065, and 16355). The mitigation should provide long-term conservation value for the suite of species and habitat being impacted by the Project. Furthermore, in order for mitigation measures to be effective, they need to be specific, enforceable, and feasible actions that will improve environmental conditions.

5. *Habitat Revegetation/Restoration Plans*: Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant restoration techniques. Plans should identify the assumptions used to develop the proposed restoration strategy. Each plan should include, at a minimum: (a) the location of restoration sites and assessment of appropriate reference sites; (b) the plant species to be used, sources of local propagules, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) a local seed and cuttings and 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. Monitoring of restoration areas should extend across a sufficient time frame to ensure that the new habitat is established, self-sustaining, and capable of surviving drought.

CDFW recommends that local onsite propagules from the Project area and nearby vicinity be collected and used for restoration purposes. Onsite seed collection should be initiated in advance of Project impacts in order to accumulate sufficient propagule material for subsequent use in future years. Onsite vegetation mapping at the alliance and/or association level should be used to develop appropriate restoration goals and local plant palettes. Reference areas should be identified to help guide restoration efforts. Specific restoration plans should be developed for various Project components as appropriate.

Restoration objectives should include protecting special habitat elements or re-creating them in areas affected by the Project; examples could include retention of woody material, logs, snags, rocks, and brush piles.

6. *Nesting Birds and Migratory Bird Treaty Act:* Please note that it is the Project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Fish and Game Code sections 3503, 3503.5, and 3513 afford protective measures as follows: Fish and Game Code section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and Game Code section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act.

   CDFW recommends that the DEIR include the results of avian surveys, as well as specific avoidance and minimization measures to ensure that impacts to nesting birds do not occur. Project-specific avoidance and minimization measures may include, but not be limited to: Project phasing and timing, monitoring of Project-related noise (where applicable), sound walls, and buffers, where appropriate. The DEIR should also include specific avoidance and minimization measures that will be implemented should a nest be located within the Project site. If pre-construction surveys are proposed in the DEIR, the CDFW recommends that they be required no more than three (3) days prior to vegetation clearing or ground disturbance activities, as instances of nesting could be missed if surveys are conducted sooner.

7. *Moving out of Harm's Way:* To avoid direct mortality, CDFW recommends that the lead agency condition the DEIR to require that a CDFW-approved qualified biologist

be retained to be onsite prior to and during all ground- and habitat-disturbing activities to move out of harm's way special status species or other wildlife of low or limited mobility that would otherwise be injured or killed from Project-related activities. Movement of wildlife out of harm's way should be limited to only those individuals that would otherwise by injured or killed, and individuals should be moved only as far a necessary to ensure their safety (i.e., CDFW does not recommend relocation to other areas). Furthermore, it should be noted that the temporary relocation of onsite wildlife does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss.

8. *Translocation of Species*: CDFW generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species as studies have shown that these efforts are experimental in nature and largely unsuccessful.

California Endangered Species Act

CDFW is responsible for ensuring appropriate conservation of fish and wildlife resources including threatened, endangered, and/or candidate plant and animal species, pursuant to CESA. CDFW recommends that a CESA Incidental Take Permit (ITP) be obtained if the Project has the potential to result in "take" (California Fish andGame Code Section 86 defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") of State-listed CESA species, either through construction or over the life of the Project. It is the policy of CESA to conserve, protect, enhance, and restore State-listed CESA species and their habitats.

CDFW encourages early consultation, as significant modification to the proposed Project and avoidance, minimization, and mitigation measures may be necessary to obtain a CESA ITP. The California Fish and Game Code requires that CDFW comply with CEQA for issuance of a CESA ITP. CDFW therefore recommends that the DEIR addresses all Project impacts to listed species and specifies a mitigation monitoring andreporting program that will meet the requirements of CESA.

Western Riverside County Multiple Species Habitat Conservation Plan

CDFW issued Natural Community Conservation Plan Approval and Take Authorization for the Western Riverside County MSHCP per Section 2800, *et seq*., of the California Fish and Game Code on June 22, 2004. The MSHCP establishes a multiple species conservation program to minimize and mitigate habitat loss and provides for the incidental take of covered species in association with activities covered under the permit.

Compliance with approved habitat plans, such as the MSHCP, is discussed in CEQA. Specifically, Section 15125(d) of the CEQA Guidelines requires that the CEQA document discuss any inconsistencies between a proposed Project and applicable

general plans and regional plans, including habitat conservation plans and natural community conservation plans. An assessment of the impacts to the MSHCP as a result of this Project is necessary to address CEQA requirements. To obtain additional information regarding the MSHCP please go to: https://www.wrc-rca.org/.

For CDFW to evaluate any inconsistencies between the proposed Project and the MSHCP, CDFW recommends that the DEIR demonstrates, at a minimum, how the Project complies with:

> The policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, set forth in Section 6.1.2 of the MSHCP; the policies for the Protection of Narrow Endemic Plant Species set forth in Section 6.1.3 of the MSHCP; Additional Survey Needs and Procedures as set forth in Section 6.3.2 of the MSHCP; the Urban/Wildlands Interface Guidelines as set forth in Section 6.1.4 of the MSHCP; Best Management Practices and the sitting, construction, design, operation and maintenance guidelines as set forth in Section 7.0 and Appendix C of the MSHCP.

The District is the lead agency but is not signatory to the MSHCP, therefore, in order to participate in the MSHCP they would need to act as a Participating Special Entity (PSE). If the District chooses to act as a PSE and obtain take through the MSHCP then all of the MSHCP policies and procedures would apply to this Project, and the DEIR should discuss how the Project will demonstrate consistency with the MSHCP. If the Project is not processed through the MSHCP for covered species, then the Project may be subject to the Federal Endangered Species Act (FESA) and/or CESA for threatened, endangered, and/or candidate species.

Regardless of whether take of threatened and/or endangered species is obtained through the MSHCP or through a CESA ITP, the DEIR needs to address how the proposed Project will affect the policies and procedures of the MSHCP. Therefore, all surveys required by the MSHCP policies and procedures listed above to determine consistency with the MSHCP should be conducted and results included in the DEIR so that CDFW can adequately assess whether the Project will impact the MSHCP.

Stephens' Kangaroo Rat Habitat Conservation Plan

The Project occurs within the Stephens' kangaroo rat (*Dipodomys stephensi*) Habitat Conservation Plan (SKR HCP) fee area boundary, SKR HCP plan area map available here: https://rchca.us/DocumentCenter/View/200/SKR-Plan-Area. State and federal authorizations associated with the SKR HCP provide take authorization for Stephens' kangaroo rat within its boundaries, and the MSHCP provides Take Authorization for Stephens' kangaroo rat outside of the boundaries of the SKR HCP, but within the MSHCP area boundaries. The DEIR should identify if any portion of the Project will occur on SKR HCP lands, or on Stephens' kangaroo rat habitat lands outside of the SKR HCP, but within the MSHCP. Note that the SKR HCP allows for encroachment into the Stephens'

kangaroo rat Core Reserve for public projects, however, there are no provisions for encroachment into the Core Reserve for privately owned projects. If impacts to Stephens' kangaroo rat habitat will occur from the proposed Project, the DEIR should specifically identify the total number of permanent impacts to Stephens' kangaroo rat core habitat and the appropriate mitigation to compensate for those impacts.

Lake and Streambed Alteration Program

Based on review of material submitted with the NOP and review of aerial photography, at least one drainage feature traverses the site. Depending on how the Project is designed and constructed, it is likely that the Project applicant will need to notify CDFW per Fish and Game Code section 1602. Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may do one or more of the following: substantially divert or obstruct the natural flow of any river, stream, or lake; substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or deposit debris, waste or other materials that could pass into any river, stream, or lake. Please note that "any river, stream or lake" includes those that are episodic (i.e., those that are dry for periods of time) as well as those that are perennial (i.e., those that flow year-round). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow.

Upon receipt of a complete notification, CDFW determines if the proposed Project activities may substantially adversely affect existing fish and wildlife resources and whether a Lake and Streambed Alteration (LSA) Agreement is required. An LSA Agreement includes measures necessary to protect existing fish and wildlife resources. CDFW may suggest ways to modify your Project that would eliminate or reduce harmful impacts to fish and wildlife resources.

CDFW's issuance of an LSA Agreement is a "project" subject to CEQA (see Pub. Resources Code § 21065). To facilitate issuance of an LSA Agreement, if necessary, the DEIR should fully identify the potential impacts to the lake, stream, or riparian resources, and provide adequate avoidance, mitigation, and monitoring and reporting commitments. Early consultation with CDFW is recommended since modification of the proposed Project may be required to avoid or reduce impacts to fish and wildlife resources. To submit a Lake or Streambed Alteration notification, please go to https://wildlife.ca.gov/Conservation/Environmental-Review/EPIMS .

ADDITIONAL COMMENTS AND RECOMMENDATIONS

Native Landscaping

To ameliorate the water demands of this Project, CDFW recommends incorporation of water-wise concepts in Project landscape design plans. In particular, CDFW recommends xeriscaping with locally native California species, and installing water-efficient and targeted irrigation systems (such as drip irrigation). Native plants support butterflies, birds,

reptiles, amphibians, small mammals, bees, and other pollinators that evolved with those plants, more information on native plants suitable for the Project location and nearby nurseries is available at CALSCAPE: https://calscape.org/. Local water agencies/districts and resource conservation districts in your area may be able to provide information on plant nurseries that carry locally native species, and some facilities display drought-tolerant locally native species demonstration gardens (for example the Riverside-Corona Resource Conservation District in Riverside). Information on drought-tolerant landscaping and water-efficient irrigation systems is available on California's Save our Water website: https://saveourwater.com/ .

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). Information can be submitted online or via completion of the CNDDB field survey form at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data . The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

ENVIRONMENTAL DOCUMENT FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying Project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.).

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP of a DEIR for the Lake Skinner Regional Water Transmission System Project (SCH No. 2022070445) and recommends that the District address CDFW's comments and concerns in the forthcoming DEIR. Questions regarding this letter or further coordination should be directed Katrina Rehrer, Environmental Scientist, at Katrina.rehrer@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Kim Freeburn
84F92FFEEFD24C8...

Kim Freeburn
Environmental Program Manager

ec:

Carly Beck, Senior Environmental Scientist Supervisor
Inland Deserts Region
Carly.Beck@wildlife.ca.gov

Office of Planning and Research, State Clearinghouse, Sacramento
state.clearinghouse@opr.ca.gov

Tricia Campbell (Western Riverside County Regional Conservation Authority)
Director of Reserve Management and Monitoring
tcampbell@rctc.org

NATIVE AMERICAN HERITAGE COMMISSION

GOVERNOR'S OFFICE OF PLANNING AND RESEARCH
Dec 19 2023
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NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

December 19, 2023

Joseph Broadhead
Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92570

Re: 2022070445, Lake Skinner Regional Water Transmission System Project, Riverside County

Dear Mr. Broadhead:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

- **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
- **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:

- **a.** If part or all of the APE has been previously surveyed for cultural resources.
- **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
- **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
- **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. 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.

- **a.** 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.
- **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

JASON E. UHLEY
General Manager-Chief Engineer

1995 MARKET STREET
RIVERSIDE, CA 92501
951.955.1200
FAX 951.788.9965
www.rcflood.org

254272

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

January 3, 2024

Eastern Municipal Water District
Attn: Joseph Broadhead
2270 Trumble Road
Perris, CA 92570

Dear Mr. Broadhead:

Re: EMWD EIR EM-11 Transmission Pipeline and Pump Station Project

This letter is written in response to the Notice of Preparation (NOP) for the EM-11 Transmission Pipeline and Pump Station Project (Project). The Eastern Municipal Water District (EMWD) will be preparing a Draft Environmental Impact Report (DEIR) for the Project.

The proposed Project will be constructed in phases and includes three main components: (1) a new service connection (referred to as a turnout) to receive treated water deliveries from The Metropolitan District of California Robert A. Skinner Water Treatment Plant. This phase includes construction of a pump station, turnout facility, and a 72-inch diameter pipeline segment; (2) a new pump station that would connect to the turnout to supply water to EMWD's service area; and (3) a new transmission pipeline. Collectively, these components are known as the EM-11 Project.

The Riverside County Flood Control and Water Conservation District (District) review is based on the above-referenced project transmittal, received December 12, 2023 and December 18, 2023. The District **has not** reviewed the proposed Project in detail, and the following comments do not in any way constitute or imply District approval or endorsement of the proposed Project with respect to flood hazard, public health and safety, or any other such issue. The District does not normally recommend conditions for land divisions or other land use cases in incorporated cities. The District also does not plan check city land use cases, or provide the State Division of Real Estate letters or other flood hazard reports for such cases. District comments/recommendations for such cases are normally limited to items of specific interest to the District including District Master Drainage Plan facilities, other regional flood control and drainage facilities which could be considered a logical component or extension of a master plan system, and District Area Drainage Plan fees (development mitigation fees). In addition, information of a general nature is provided.

The District has the following comments/concerns that should be addressed in the DEIR.

1. Please be advised that any work that involves District rights of way or easement will require an encroachment permit from the District. As part of the encroachment permit process, the applicant will be required to submit a series of documents including but not limited to:

a. CEQA Compliance: To help expedite the encroachment permit process, the District requests to be listed as a Responsible Agency in the Final EIR. Upon adoption of the final environmental document, please submit a copy of the adopted Final EIR to the District for consideration with your encroachment permit package. Please be sure to include all appendices that were used to support the conclusions found in the environmental document.

b. Regulatory Permits: If work within District rights of way or easements is required within open channel facilities (i.e., Salt Creek Channel and French Valley Channel) regulatory permits may be required to comply with Section 404/401 of the Clean Water Act, and Section 1600 of the California Fish and Game Code. If regulatory permits are required, the applicant will be required to furnish such permits prior to the issuance of a District Encroachment Permit. The District will need to review these permits in order to verify that temporary and permanent impacts within the District's rights of way or easements are covered by the permits. The District will also need to confirm that no compensatory mitigation that would impede the District's maintenance activities is included within District rights of way. Regulatory permits should be submitted as part of your submittal for an encroachment permit. Please be sure to include plans and exhibits that indicate the specific location of where temporary and permanent impacts will occur within District rights of way or easements.

c. MSHCP Consistency: The District is a Permittee under the Multiple Species Habitat Conservation Plan (MSHCP). If an encroachment permit or other District approval is required, the Project proponent will need to demonstrate that all Project related activities within District rights of way or easements are consistent with the MSHCP. To accomplish this, the CEQA document should include a MSHCP consistency analysis with all of its supporting documents with the encroachment permit application. The MSHCP consistency report should address, at a minimum, Sections 6.1.2, 6.1.3, 6.1.4, 6.3.2, 7.3.7, 7.5.3 and Appendix C of the MSHCP.

To obtain further information on District encroachment permits and to find an application form, please refer to https://rcflood.org/I-Want-To/Services/Obtain-Encroachment-or-Access-Permit, or contact the District's Encroachment Permit Manager at 951.955.1266 to confirm the need for an encroachment permit and the requirements to obtain one.

2. It should also be noted that the District would consider accepting ownership of certain storm drain facilities that are constructed as part of the project upon written request from EMWD. In order to be accepted by the District, facilities must be 36-inches or larger, constructed to District standards, complete the District's plan check and inspection process and pay any applicable administrative fees. To obtain further information regarding the design requirements for the District to accept developer-built facilities, please contact the District at 951.955.1200 and speak with the Plan Check Section.

3. The proposed project is located within the District's Perris Valley Master Drainage Plan (MDP) footprint. When fully implemented, MDP facilities will provide flood protection to relieve those areas within the plan boundaries of the most serious flooding problems and will provide adequate drainage outlets. The EIR should consider any potential impacts to the MDP facilities. The District's MDP facility maps can be viewed online at http://content.rcflood.org/MDPADP/. To obtain further information on the MDP and proposed facilities, please contact Deborah De Chambeau of the District's Planning Section at 951.955.1491.

4. The proposed project is located within the limits of the District's Perris Valley Area Drainage Plan (ADP) for which drainage fees have been adopted; applicable fees should be paid by cashier's check or money order only to the District prior to issuance of grading permits. Fees to be paid should be at the rate in effect at the time of issuance of the actual permit. ADP maps can be viewed online at: http://content.rcflood.org/MDPADP/. Links to the ADP reports can be found by clicking on the individual ADPs within the webmap. To obtain additional information on the ADP and the proposed facilities, please contact Deborah De Chambeau of the District's Planning Section at 951.955.1491.

Thank you for the opportunity to comment on the NOP. Please forward any subsequent environmental documents regarding the Project to my attention at this office. Any further questions concerning this letter may be referred to me at 951.955.8018.

Very truly yours,

MARGARET BORNYASZ
Senior Flood Control Planner

ec: Albert Martinez
Joan Valle
Deborah de Chambeau

HS:rlp

Jackson Tidus
A LAW CORPORATION

February 20, 2024

Direct Dial: 949.851.7409
Email: mstaples@jacksontidus.law
Reply to: Irvine Office
File No: 4063-128824

Comments on Notice of Intent to Prepare Draft Environmental Impact Report for the Proposed Lake Skinner Regional Water Transmission System Project (formerly known as the EM-11 Transmission Pipeline and Pump Station Project)

Submitted by:
Michele A. Staples, Esq.
Blake D. Senet, Esq.
Jackson Tidus

On behalf of:
Fred 160
Craig 435
Andy Domenigoni
Donald Domenigoni
Steven Domenigoni
Holland Heritage 120

To Eastern Municipal Water District
ATTENTION: Joseph Broadhead (broadhej@emwd.org)
2270 Trumble Road
Perris, CA 92570

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Irvine Office
2030 Main Street, 12th Floor
Irvine, California 92614
t 949.752.8585 f 949.752.0597

Westlake Village Office
2815 Townsgate Road, Suite 200
Westlake Village, California 91361
t 805.230.0023 f 805.230.0087

www.jacksontidus.law

SENT VIA EMAIL (broadhej@emwd.org) AND OVERNIGHT DELIVERY

February 20, 2024

Eastern Municipal Water District
ATTENTION: Joseph Broadhead
2270 Trumble Road
Perris, CA 92570

I. Introduction and Summary.

We represent the following owners of land on which Eastern Municipal Water District ("***EMWD***") proposes to construct the Lake Skinner Regional Water Transmission System ("***EMWD Project***"): Fred 160, Craig 435, Andy Domenigoni, Donald Domenigoni, Steven Domenigoni, and Holland Heritage 120 (collectively, the "***Domenigoni-Bartons***"). The Domenigoni-Bartons appreciate the opportunity to comment on the EMWD Project's Notice of Preparation ("***NOP***").

Based on information provided in the NOP, the EMWD Project's proposed transmission pipelines would traverse almost 2 miles of the Domenigoni-Bartons' property. The Domenigoni-Bartons submit these comments as potentially affected individuals.

EMWD has also published a Notice of Completion & Environmental Document Transmittal (see Lake Skinner Notice of Completion) indicating its intent to prepare an environmental impact report for the EMWD Project ("***EIR***"). The Notice of Completion provides additional information on the EMWD Project including the issues EMWD proposes to discuss in the EIR and the list of reviewing state agencies. The Notice of Completion does not list land use or water supply/groundwater among the issues that EMWD plans to analyze in the EIR.

As discussed in greater depth below, the EIR should disclose, analyze and mitigate the following potential adverse impacts to the Domenigoni-Bartons:

- Land use impacts to the Domenigoni-Bartons' existing agricultural operations;
- Land use impacts to the planned development of the Riverside County-approved Domenigoni-Barton Specific Plan No. 310 ("***Domenigoni-Barton Specific Plan***");
- Biological resources impacts to the Western Riverside County Multiple Species Habitat Conservation Plan's ("***WR-MSHCP***") habitat conservation area within the Domenigoni-Barton Specific Plan adjacent to the EMWD Project site;
- Water supply impacts to the Domenigoni-Bartons' wells and water system; and
- Impacts to the underlying West Domenigoni Groundwater Basin.

Relevant documents cited in this comment letter are electronically linked below and incorporated by reference.

II. Request for Notice.

Please note that we are requesting notices of CEQA actions and notices of any public meetings, hearings and opportunities for comment. This request is made pursuant to Public Resources Code sections 21092.2 and 21167(f), and Government Code section 65092, which require agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body. Please send notices by U.S. mail and electronic mail to:

Domenigoni-Barton Properties
Attn: Cindy and Andy Domenigoni
31851 Winchester Road
Winchester, CA 92596
sky.canyon@verizon.net

and

Michele Staples
Jackson Tidus
2030 Main Street, 15th Floor
Irvine, CA 92614
Mstaples@jacksontidus.law

III. The EMWD Project Description is Inadequate to Solicit Guidance on the Scope and Content of the Environmental Information to be Included in the EIR.

The purpose of a NOP is to solicit guidance as to the scope and content of the environmental information to be included in an EIR. A NOP must include sufficient information describing the project and the potential environmental effects to enable a meaningful response. (14 Cal. Code Regs. § 15000, et seq. ("***CEQA Guidelines***"), §§ 15082, 15083.) CEQA defines a "project" in terms of its direct and indirect physical changes in the environment. (Cal. Pub. Res. Code § 21000, et seq. ("***CEQA***"), § 21065.) A significant deficiency of the NOP is that it describes the EMWD Project's components, but does not describe how EMWD proposes to physically construct, operate and maintain them.

The NOP's description of the EMWD Project discusses three main components of the EMWD Project: 1) a water service connection/turnout to transfer treated water deliveries from Metropolitan's Skinner Water Treatment Plant to EMWD, 2) a new Booster Pump Station that would connect to the turnout to pump water to EMWD's service area, and 3) new transmission pipelines to deliver water from the Skinner Water Treatment Plant to EMWD's service area. Based on the Project Alignment exhibit attached as Figure 2 of the NOP, the pump station and turnout sites are south of the Domenigoni-Barton Specific Plan, while the transmission pipelines traverse the Specific Plan site for a distance of about 2 miles.

The current NOP includes insufficient information about the EMWD Project's transmission pipelines to enable the Domenigoni-Bartons to provide a meaningful response as to the potential environmental impacts of the EMWD Project and measures to mitigate those impacts. However, additional information is available online about an earlier version of the EMWD Project. According to the NOP, the EMWD Project was formerly called the "EM-11 Transmission Pipeline and Pump Station Project" ("***EM-11 project***") and a NOP was circulated for the earlier iteration of the EMWD Project in July 2022. EMWD's current NOP explains that the Project includes similar components and objectives as the EM-11 project; however, the locations of the Project components have changed. Therefore, EMWD recirculated the current NOP. (See NOP p.1.)

EMWD's earlier proposal for the EM-11 project's transmission pipelines was a combination of relining and using Metropolitan Water District of Southern California's ("***Metropolitan***") existing, subsurface San Diego Aqueduct Pipeline Nos. 1 and 2, and installing new pipelines within Metropolitan's San Diego Aqueduct easements. (See slides 5-8 and slides 11-12 of the EM-11 Water Transmission System Update Item 3981) San Diego Aqueduct Pipeline No.1 is a 54 inch diameter pipeline and San Diego Aqueduct Pipeline No.2 is a 48 inch diameter pipeline. (See, Domenigoni-Barton Specific Plan No. 310 Supplemental Environmental Impact Report ("***SEIR***"), Metropolitan Comment Letter to SEIR NOP (pdf p. 260 of 389, MWD Comment S-1).)

Metropolitan no longer uses the San Diego Aqueduct pipelines traversing the Specific Plan site to transport imported water. (See, SEIR, Response to Metropolitan Comment Letter to SEIR NOP, p. III-32 (pdf p. 385 of 389, Response to Comment MWD-S4a).) Instead, Metropolitan now uses the Aqueduct pipelines to transport water released from the Diamond Valley Reservoir. Metropolitan does not have the right to store local waters in the reservoir, so a "Memorandum of Understanding and Agreement on Operation of Domenigoni Valley Reservoir" was developed and approved on January 19, 1995 by the federal court that oversees the Santa Margarita River water rights adjudication (*United States of America v. Fallbrook Public Utility District, et al.*, U.S. District, S.D. Cal., Court Case No. 51-CV-1247-JO-RBB). The MOU requires Metropolitan to release water from the Diamond Valley Reservoir to the downstream area in an amount equivalent to the local surface waters impounded by the reservoir. Metropolitan makes the required water releases by way of the below ground Aqueduct pipelines because releasing the water at the surface results in flooding of the Domenigoni-Bartons' property.

EMWD's November 17, 2020 power point presentation on the former EM-11 project says that legal counsel for EMWD and Metropolitan have determined that Metropolitan's easement rights are transferrable and that EMWD intends to formally request Metropolitan's authorization for the transfer of easement rights. (See slide 12 of EM-11 Water Transmission System Update Item 4653.) However, EMWD's current NOP does not specifically reference Metropolitan's pipelines and easements. Rather, the NOP says that the Project's transmission pipelines would be developed in phases. The NOP describes three pipeline segments in or adjacent to the Domenigoni-Bartons' property:

1) EMWD would reline the existing 49-inch pipeline extending about 3.2 miles from the proposed new booster pump station and turnout near the intersection of Auld Road and Leon Road southeast of the Specific Plan, to Holland Road at the northeastern end of the Specific Plan;

2) EMWD would install a "new 60-inch pipeline" extending about 3.6 miles from Holland Road to Simpson Road; and

3) EMWD would install a new 48-inch parallel pipe extending about 2.2 miles from Fowler Drive to Holland Road.

No information is provided about the EMWD Project's proposed physical construction related to relining and installing the new pipeline segments, or EMWD's long-term operation and maintenance activities. For example, will the EMWD Project dig through the ground surface to reline the existing Metropolitan pipeline segments and install new pipeline segments, or bore beneath the surface, or some combination of the two? Will the installation of new pipeline segments replace the existing Metropolitan pipelines or be installed in the same easement area above the existing Metropolitan pipelines closer to the ground surface? Will Metropolitan's makeup water releases still be made below ground through the Aqueduct pipelines after the EMWD Project is operational, or will the EMWD Project result in potential surface flooding impacts to the Domenigoni-Bartons' property as a result of Metropolitan's continuing obligation to release surface water downstream without the ability to continue using the Aqueduct pipelines to transport the water releases?

The EMWD Project's potential environmental impacts necessarily depend on EMWD's proposed physical activities to construct, operate and maintain the Project components, but the NOP includes no such information. ***The Domenigoni-Bartons request an opportunity to meet with EMWD Project technical personnel before the Draft EIR is published to obtain a better description of the proposed Project as necessary to provide EMWD with information about potential environmental impacts and to discuss feasible measures to avoid or lessen the EMWD Project's adverse impacts.***

IV. Potential Adverse Environmental Impacts and Mitigation Measures.

A. ***Project Description.*** Consistent with CEQA Guidelines section 15124, the EMWD Project EIR should discuss:

- The precise location and boundaries of the EMWD Project;

- EMWD's engineering proposals to reline, install, operate and maintain the Project's transmission pipelines, including the extent to which San Diego Aqueduct Pipeline Nos.1 and 2 will be altered or utilized for the EMWD Project, the locations and manner in which EMWD proposes to install new transmission pipelines as part of the EMWD Project, how the existing Metropolitan pipelines are to be relined, EMWD's anticipated activities to operate and maintain the pipelines, and how those operation

and maintenance activities may impact Metropolitan's surface water releases from the Diamond Valley Reservoir Project; and

- Whether the EMWD Project would expand the use of Metropolitan's San Diego Aqueduct easements to add EMWD's use, or whether Metropolitan's easements would be transferred to EMWD.

B. ***Environmental Setting***. As discussed above, the EMWD Project's proposed pipeline traverses almost 2 miles of the Domenigoni-Bartons' property. In order to give the public and decision makers the most accurate and understandable picture of the EMWD Project's likely near-term and long-term impacts, the EMWD Project EIR's description of the environmental setting should include that the Metropolitan San Diego Aqueduct Pipelines traversing the Domenigoni-Bartons' property are no longer used to transport imported water.

C. ***Impacts to Domenigoni-Bartons' Existing Land Uses.*** Current land uses on the Domenigoni-Bartons' property include residences, turf farming, dry land and irrigated crop rotation farming, alfalfa production and livestock grazing, all allowed by both the existing Metropolitan easements and approved Domenigoni-Barton Specific Plan.

The EMWD Project EIR should analyze, disclose and mitigate the potential adverse impacts to the Domenigoni-Barton's current residential and agricultural land uses resulting from relining, installing, operating and maintaining the EMWD Project's pipelines.

In order to avoid potential conflicts with the Domenigoni-Bartons' existing land uses, we request that the EMWD Project EIR include the following mitigation measures:

- EMWD to enter into an entry permit agreement with the Domenigoni-Bartons. The Domenigoni-Bartons' property is currently an operating farm with residences, livestock and heavy equipment. The entry permit should provide for advance notice before entering onto the Domenigoni-Bartons' property, insurance, and management of personnel entering onto the Domenigoni-Bartons' property to protect ranch personnel, equipment, water supplies and crops as well as the safety of EMWD Project personnel. EMWD and other public agencies have entered into similar entry agreements with the Domenigoni-Bartons for other public projects on their property.

- Plans for any activity on the Domenigoni-Bartons' property including design plans, construction plans, and operation and maintenance plans, to be submitted for the Domenigoni-Bartons' advance review and written approval.

- Plans for Metropolitan to continue to use the San Diego Aqueduct pipelines to transport surface water releases below ground through the Domenigoni-Bartons' property to prohibit surface flooding.

D. ***Land Use Impacts to Approved Domenigoni-Barton Specific Plan.*** Approved land uses for Domenigoni-Barton Specific Plan development include 4,186 residential units, commercial, light industrial, parks, open space, habitat conservation and schools. Metropolitan's existing San Diego Aqueduct pipelines are located beneath the Specific Plan's "Paseo" that runs about 2 miles diagonally across the Specific Plan site from Winchester Road on the northeast to Wickerd Road on the southwest. (See Specific Plan Figure II-5, pdf p. 13 of 14.) Metropolitan's existing pipelines also extend along the east of Winchester Road about .2 miles to the Domenigoni-Barton Specific Plan's northeast boundary through the Specific Plan's Planning Area 3.

The NOP provides some detail as to estimated timing and phasing of the EMWD Project. The NOP says that relining and installation of the existing 49" pipeline will not begin until 2035, and provides later dates for the other pipeline segments in and adjacent to the Domenigoni-Bartons' property. Therefore, it is likely that much of the Domenigoni-Barton Specific Plan will be constructed and used for residential subdivisions, businesses, schools, parks and habitat conservation by the time EMWD starts installing the EMWD Project's transmission pipelines.

In order to avoid potential conflicts with the Domenigoni-Barton Specific Plan land uses, we request that the EMWD Project EIR include the following mitigation measures:

- A plan to coordinate construction of the EMWD Project pipelines on Domenigoni-Barton Specific Plan property with construction of the Domenigoni-Barton Specific Plan.

- Plans for any activity on the Domenigoni-Barton Specific Plan property including design plans, construction plans, and operation and maintenance plans, to be submitted for advance review and written approval by the affected homeowners associations, developers, agencies and other authorities then governing the Specific Plan properties traversed by the EMWD Project's pipelines.

- Plans for Metropolitan to continue to use the San Diego Aqueduct pipelines to transport surface water releases below ground through the Domenigoni-Bartons' property to prohibit surface flooding.

E. ***Biological resources impacts.*** The Domenigoni-Barton Specific Plan falls within the WR-MSHCP. In developing the WR-MSHCP, Riverside County incorporated into its analysis and development of the Criteria Area, the existing vegetation types, soils, habitats, and species present or potentially present at the Domenigoni-Barton Specific Plan. The MSHCP-Volume 1.pdf says at pdf p. 246-247 of 1312:

> "During the conservation planning process for the MSHCP, a number of projects have proceeded through the entitlement process or have been the subject of a Memorandum of Understanding (MOU) and have sometimes been modified to be consistent with the MSHCP Core and Linkage guidelines, Area Plan Subunit Biological Issues and Considerations and Cell Criteria. Several of these projects have received local and/or state or federal approvals, but have not yet commenced construction. Future construction

of these projects in accordance with the relevant approvals would be considered to be consistent with the MSHCP guidelines and Criteria. Projects known to fall within this category are listed below. . . SP310. . . ."

The Domenigoni-Barton Specific Plan includes a WR-MSHCP northern corridor habitat area encompassing 93.5 acres of the densest Riversidian Sage Scrub on-site located at ground surface near the alignment of the Metropolitan San Diego Aqueduct below-ground pipelines. The EMWD Project EIR should disclose and analyze whether the construction activities to reline the existing Metropolitan pipelines and install new pipelines may adversely impact the WR-MSHCP northern corridor habitat on the Domenigoni-Barton Specific Plan site.

In order to avoid potential conflicts with the WR-MSHCP northern corridor habitat, we ask that the EMWD Project EIR include the following mitigation measures:

- Measures to avoid the onsite Riversidian Sage Scrub and northern corridor habitat area.

- A plan for EMWD to fully restore and replace conservation value of habitat on the Domenigoni-Barton Specific Plan site that may be impaired by the EMWD Project, as necessary to fully satisfy the WR-MSHCP Core and Linkage requirements.

F. ***Water Supply Impacts.*** The Domenigoni-Bartons' water is supplied by several groundwater wells on the property interconnected by transmission and distribution pipelines, by EMWD potable and recycled water hookups and distribution pipelines, and by Metropolitan San Diego Canal water and transmission pipeline extending from the east side of Winchester Road to the Domenigoni-Bartons' property on the west side of Winchester Road. The Metropolitan water supplies and EMWD water supplies are governed by a groundwater mitigation agreement with Metropolitan included as part of the Riverside County Superior Court's judgment in *The Metropolitan Water District of Southern California v. Jean Domenigoni, et al.*, Case No. 229049.

The EMWD Project EIR should disclose and analyze whether the construction activities to reline the existing Metropolitan pipelines and install new pipelines traversing the Domenigoni-Bartons' property may damage or otherwise interfere with the Domenigoni-Bartons' existing water supply wells and pipelines.

In order to avoid potential conflicts with the Domenigoni-Bartons' water supply, we request that the EMWD Project EIR include the following mitigation measures:

- A plan to ensure continuous water supplies to the Domenigoni-Bartons during EMWD Project construction, including in-lieu water hookups and other measures as necessary to replace impaired water supplies and prevent water supply disruption.

- Plans for any activity on the Domenigoni-Bartons' property including design plans, construction plans, and operation and maintenance plans, to be submitted for the Domenigoni-Bartons' advance review and written approval.

G. ***Impacts to the West Domenigoni Groundwater Basin.*** The Domenigoni-Bartons' property overlies the West Domenigoni Groundwater Basin. Wells on the Domenigoni-Bartons' property extract water from the underlying groundwater basin to supply the Domenigoni-Bartons' water demands. Groundwater underlying the Domenigoni-Barton Specific Plan site would continue to be used as a source of water supply for the Specific Plan. (See, SEIR, p. II-G-5 (pdf p. 233 of 389, discussing EMWD's West San Jacinto Groundwater Basin Management Plan and Local Groundwater).)

The EMWD Project's pipeline construction activities may have adverse impacts on the groundwater basin. In the past, water pipeline construction projects in other groundwater basins in Riverside County have caused adverse impacts to groundwater basins and well supplies by causing groundwater to pour into the pipeline tunnels, thereby draining the groundwater basins and diminishing or impeding well yield (for example, Metropolitan's San Jacinto Tunnel project and resulting settlement agreements).

In order to avoid potential conflicts with the Domenigoni-Bartons' water supply, we request that the EMWD Project EIR include the following mitigation measures:

- A construction plan for relining Metropolitan's pipelines and installing new pipelines using equipment and technology that seals the pipeline tunnel as it is being drilled to prohibit groundwater from seeping into the pipeline tunnel.

- A plan to ensure continuous water supplies to the Domenigoni-Bartons and Domenigoni-Barton Specific Plan land uses during EMWD Project construction, including in-lieu water hookups and other measures as necessary to replace impaired water supplies and prevent water supply disruption.

V. Conclusion.

Thank you for your consideration of these comments. The Domenigoni-Bartons would welcome the opportunity to discuss these comments further with EMWD Project technical staff before publication of the Draft EIR.

Respectfully submitted,
JACKSON TIDUS

By: Michele A. Staples
Michele A. Staples

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SENT VIA E-MAIL: February 21, 2024

broadhej@emwd.org
Joseph Broadhead, Principal Water Resource Specialist
Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92570

Notice of Preparation of a Draft Environmental Impact Report for the Lake Skinner Regional Water Transmission System (Proposed Project) (formerly EM-11 Transmission Pipeline and Pump Station Project)

South Coast Air Quality Management District (South Coast AQMD) staff appreciate the opportunity to comment on the above-mentioned document. Our comments are recommendations on the analysis of potential air quality impacts from the Proposed Project that should be included in the Draft Environmental Impact Report (EIR). Please send a copy of the Draft EIR upon its completion and public release directly to South Coast AQMD as copies of the Draft EIR submitted to the State Clearinghouse are not forwarded. **In addition, please send all appendices and technical documents related to the air quality, health risk, and greenhouse gas analyses (electronic versions of all emission calculation spreadsheets, air quality modeling, and health risk assessment input and output files, not PDF files). Any delays in providing all supporting documentation for our review will require additional review time beyond the end of the comment period.**

Responsible Agency and South Coast AQMD Permits

CEQA Guidelines Section 15096 sets forth specific procedures for a Responsible Agency, including making a decision on the adequacy of the CEQA document for use as part of the process for conducting a review of the Proposed Project and issuing discretionary approvals. Moreover, it is important to note that if a Responsible Agency determines that a CEQA document is not adequate to rely upon for its discretionary approvals, the Responsible Agency must take further actions listed in CEQA Guideline Section 15096(e), which could have the effect of delaying the implementation of the Proposed Project. In its role as CEQA Responsible Agency, the South Coast AQMD is obligated to ensure that the CEQA document prepared for this Proposed Project contains a sufficient project description and analysis to be relied upon in order to issue any discretionary approvals that may be needed for air permits.

For these reasons, the final CEQA document should be revised to include a discussion about any and all new stationary and portable equipment requiring South Coast AQMD air permits, provide the evaluation of their air quality and greenhouse gas impacts, and identify South Coast AQMD as a Responsible Agency for the Proposed Project as this information will be relied upon as the basis for the permit conditions and emission limits for the air permit(s). Please contact South Coast AQMD's Engineering and Permitting staff at (909) 396-3385 for questions regarding what types of equipment would require air permits. For more general information on permits, please visit South Coast AQMD's webpage at http://www.aqmd.gov/home/permits.

CEQA Air Quality Analysis

Staff recommends that the Lead Agency use South Coast AQMD's CEQA Air Quality Handbook and website[1] as guidance when preparing the air quality and greenhouse gas analyses. It is also recommended that the Lead Agency use the CalEEMod[2] land use emissions software, which can estimate pollutant emissions from typical land use development and is the only software model maintained by the California Air Pollution Control Officers Association.

South Coast AQMD has developed both regional and localized significance thresholds. South Coast AQMD staff recommends that the Lead Agency quantify criteria pollutant emissions and compare the emissions to South Coast AQMD's CEQA regional pollutant emissions significance thresholds[3] and localized significance thresholds (LSTs)[4] to determine the Proposed Project's air quality impacts. The localized analysis can be conducted by either using the LST screening tables or performing dispersion modeling.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the Proposed Project and all air pollutant sources related to the Proposed 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, and hauling trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers and air pollution control devices), 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, such as sources that generate or attract vehicular trips, should be included in the analysis. Furthermore, emissions from the overlapping construction and operational activities should be combined and compared to South Coast AQMD's regional air quality CEQA ***operational*** thresholds to determine the level of significance.

Mitigation Measures

In the event that the Proposed Project results in significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized to minimize these impacts. Any impacts resulting from mitigation measures must also be analyzed. Several resources to assist the Lead Agency with identifying potential mitigation measures for the Proposed Project include South Coast AQMD's CEQA Air Quality Handbook,[5] South Coast AQMD's Mitigation Monitoring and Reporting Plan for the 2022 Air Quality Management Plan,[6] and Southern California Association of Government's Mitigation Monitoring and Reporting Plan for the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy.[7].

[1] South Coast AQMD's CEQA Handbook and other resources for preparing air quality analyses can be found at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook.
[2] CalEEMod is available free of charge at: www.caleemod.com.
[3] South Coast AQMD's CEQA regional pollutant emissions significance thresholds can be found at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf.
[4] South Coast AQMD's 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.
[5] https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook
[6] South Coast AQMD's 2022 Air Quality Management Plan can be found at: http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan (Chapter 4 - Control Strategy and Implementation).
[7] Southern California Association of Governments' 2020-2045 RTP/SCS can be found at: https://www.connectsocal.org/Documents/PEIR/certified/Exhibit-A_ConnectSoCal_PEIR.pdf.

South Coast AQMD staff is available to work with the Lead Agency to ensure that air quality, greenhouse gas, and health risk impacts from the Proposed Project are accurately evaluated and mitigated where feasible. If you have any questions regarding this letter, please contact me at swang1@aqmd.gov.

Sincerely,

Sam Wang

Sam Wang
Program Supervisor, CEQA IGR
Planning, Rule Development & Implementation

SW
RVC240117-06
Control Number

LEWIS BRISBOIS

LEWIS BRISBOIS BISGAARD & SMITH LLP

Samuel C. Alhadeff
3 Better World Circle, Suite 100
Temecula, California 92590
Samuel.Alhadeff@lewisbrisbois.com
Direct: 951.252.6152

February 21, 2024

File No. 45434.2

VIA E-MAIL & U.S. MAIL

Joseph Broadhead
Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92570
broadheadj@emwd.org

Re: Lake Skinner Regional Water Transmission System (SCH-2022070445): Response to NOP

Dear Mr. Broadhead:

We represent The Manqueros Family Revocable Trust, the owners of the real property commonly known as 32680 Pines Airpark Road (APN 466-230-076-4), as further described in the attached Exhibit A (the "Property"). The Property is currently being engineered for a church use, which will require approval of a Plot Plan.

Comments on the Project Scope/Response to NOP

We have reviewed the Notice of Preparation ("NOP"), a copy of which is attached as Exhibit B, for the Environmental impact Report ("EIR") to be prepared for the Lake Skinner Regional Water Transmission System project ("Project"). The Project has the potential to significantly impact our clients and their Property. In response to the NOP, we offer the following comments and questions regarding the scope and content of information that should be included in the EIR:

1. PROJECT DESCRIPTION - It is unclear from the NOP how EMWD plans to implement the proposed Project. For example, does EMWD plan to install a new pipeline, affecting the surface of our client's Property, or will the Project just occur subsurface? Without a more detailed project description, it is difficult to anticipate all potential impacts to our client's Property. The NOP fails to provide "sufficient information describing the project and the potential environmental effects to enable . . . a meaningful response." (14 Cal. Code Regs. §15082.) A more detailed description and explanation of the Project is needed to understand how the Project will physically affect our client's Property and its existing surface uses and the related, potential environmental impacts.

2. LAND USE - Land use is not identified as having the potential to be impacted by the Project; however, the Project has the potential to significantly impact land use. We request that the EIR documentation focus on impacts to land use for our client's Property and consider its consistency with existing and proposed land uses. Specifically:

    a. Our clients run a business that stores its equipment and storage containers within the Project area. Their business will be impacted by the project as the equipment and storage containers will need to be moved and stored elsewhere. The impacts on their business need to be addressed.

    b. Our clients also have horses and an arena on the Property, within the Project area. The Project has the potential to impact this use and affect those paying to board their horses on the Property. The impacts on the equestrian uses at the Property need to be addressed.

    c. The Property is served by an on-site well, and the only source of water to the Property is via the well. Impacts to the well and the aqueduct beneath the Property resulting from the Project need to be addressed, which have potential short and long term impacts on our client's use of their Property.

    d. Our clients have been working with a 501(c)3 entity at their Property that helps veterans to get acclimated back into society. The Project will affect this business as well, and these impacts need to be addressed.

    e. Our clients are currently working on plans to build a school and church on their Property. Again, impacts on land use need to be addressed.

    f. There are several tenants residing on the Property, which will be impacted. The EIR needs to address impacts on the existing residential uses at the Property.

3. POPULATION AND HOUSING. Population and Housing is not identified as having the potential to be impacted by the Project, but the Project has the potential for significant impacts to population and housing. As stated above, several tenants currently reside on the Property who will be affected and potentially displaced by the Project. The EIR needs to address impacts to existing tenants and how these impacts will be mitigated.

4. TRANSPORTATION/TRAFFIC . Transportation/Traffic is not identified as having the potential to be impacted by the Project. However, the only access to the west south end of our client's Property is via a road that appears to be impacted by the Project. This would affect access, including emergency access, to the Property and needs to be addressed by the EIR.

5. Another land use concern is with the easement over the Property that EMWD proposes to utilize for the Project. We understand through review of historical documents that

there is an existing easement, which was granted in a successive grant first to the Department of Water and Power and then to the Metropolitan Water District. What action items will EMWD take with regard to the easement? Will EMWD have an assignment of easement, or what form of documentation will be required to document EMWD's succession to the easement? Is there a plan to use the existing easements which have been dormant for decades, or will some other easement be required?

Request for Notice

Pursuant to Public Resources Code sections 21092.2 and 21167(f), we hereby request to receive notices of any public meeting, hearing, or other opportunity for comment on the Project, as well as notices of all CEQA actions for the Project. Please send such notices to both our clients and our firm at the following mailing and email addresses:

Frank and Stacy Manqueros
c/o AAA Tree Service
28389 King Apache Circle
Menifee, CA 92584
frank@aaatree1.com
stacy@aaatree1.com

Lewis Brisbois Bisgaard & Smith, LLP
Attn: Samuel A. Alhadeff
3 Better World Circle, Suite 100
Temecula, CA 92590
Samuel.Alhadeff@lewisbrisbois.com

We certainly appreciate your time and attention. We look forward to working with you. Please make sure these comments got on file.

Very truly yours,

Samuel C. Alhadeff

Samuel C. Alhadeff of
LEWIS BRISBOIS BISGAARD & SMITH LLP

SCA:ch

Exhibit “A”

EXHIBIT "A"

THE LAND REFERRED TO HEREIN IS SITUATED IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 4 OF PARCEL MAP 23025, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY MAP THEREOF ON FILE IN BOOK 181, PAGE 6 AND 7, OF PARCEL MAPS, IN THE COUNTY RECORDER OF SAID COUNTY.

ASSESSOR'S PARCEL NUMBER: 466-230-076

Exhibit “B”

Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, CA 92572-8300

Notice of Preparation

Date:	**January 8, 2024**
To:	**State Clearinghouse; Responsible and Trustee Agencies; and Other Interested Parties**
Subject:	**Re-Issued Notice of Preparation of an Environmental Impact Report**
Project:	**Lake Skinner Regional Water Transmission System (formerly *EM-11 Transmission Pipeline and Pump Station Project*)**
Lead Agency:	**Eastern Municipal Water District**
SCH:	**2022070445**

Eastern Municipal Water District (District) intends to prepare an Environmental Impact Report (EIR) for the proposed Lake Skinner Regional Water Transmission System Project (Project), which was formerly called the *EM-11 Transmission Pipeline and Pump Station Project*. A Notice of Preparation (NOP) was previously circulated for the EM-11 Transmission Pipeline and Pump Station Project in July 2022. The current Project includes similar components and objectives as the previous version; however, the locations of the Project components have changed and therefore, this NOP is being recirculated.

The District serves as Lead Agency pursuant to the California Environmental Quality Act (CEQA). The District invites written comments on the scope of the environmental analysis and identification of potential environmental issues to be included in the EIR.

Notice of Preparation: This Notice of Preparation (NOP) has been sent to the Office of Planning and Research, Responsible and Trustee agencies, organizations, and interested parties. The purpose of the NOP is to inform recipients that the District is beginning preparation of an EIR and to solicit information that will be helpful in the environmental review process. This notice includes information on how to provide comments to the District and a description of the Project.

Comments: The District is requesting input from CEQA Responsible and Trustee agencies, other public agencies with jurisdiction by law over resources potentially affected by the proposed Project, and public input regarding the scope and content of environmental information to be included in the EIR. Agency responses should identify the issues to be considered in the EIR, including significant environmental issues, alternatives, mitigation measures, and whether the responding agency will be a responsible or trustee agency, and the basis for that determination. Due to the limits mandated by State law, your response must be sent at the earliest possible date but postmarked no later than February 21, 2024. Please send your comments to:

Eastern Municipal Water District
Attn: Joseph Broadhead
2270 Trumble Road
Perris, CA 92570

Location of the Proposed Project: The proposed Project would be located within unincorporated areas of Riverside County, east of the cities of Menifee and Murrieta (Figure 1, *Regional Location*, and Figure 2, *Project Alignment*). The transmission pipelines would extend in an overall northern direction from The Metropolitan District of California (Metropolitan) Robert A. Skinner Water Treatment Plant (Skinner WTP) approximately 14 miles through the southern Perris Valley area to the community of Winchester. The new booster pump station (BPS) and turnout would be sited near the intersection of Auld Road and Leon Road, near the District's existing EM-17 BPS and turnout and approximately two miles west of the Skinner WTP.

Overview of the Proposed Project: The District is proposing the Project to assist in expansion of its treated water supply portfolio to meet demands resulting from long-term projected growth. The Project includes construction and operation of three main components: (1) a new Metropolitan-owned water service connection (also referred to as a turnout) to transfer treated water deliveries from Metropolitan's Skinner WTP to the District; (2) a new BPS that would connect to the turnout to pump water to the District's service area; and (3) new transmission pipelines to deliver water from Skinner WTP to the District's service area. Collectively, these components comprise the Project and would be sized to meet the buildout demand condition of 140 cubic feet per second (cfs) of additional treated water supplies.

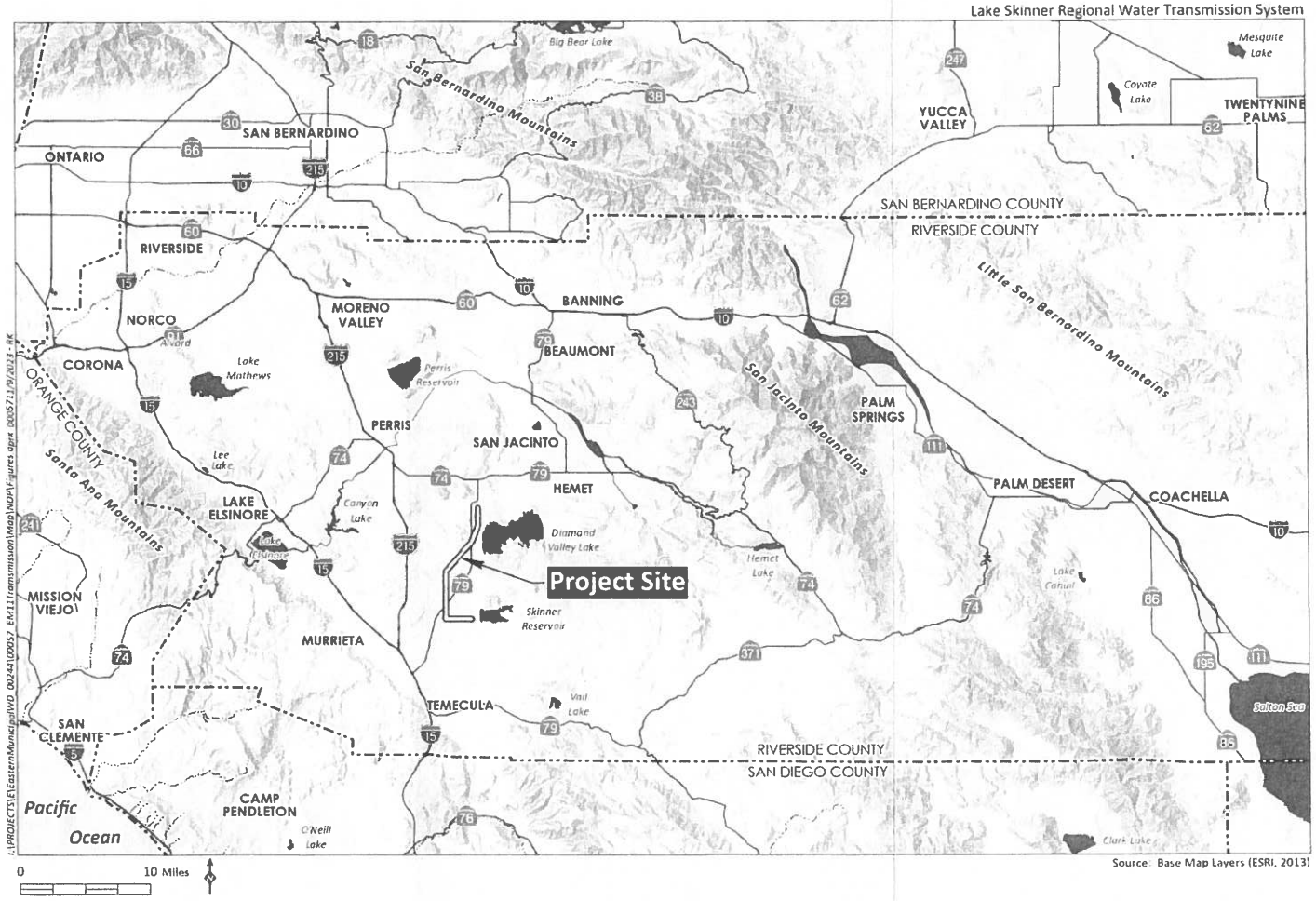
The Project components would be implemented in four phases. The first phase, which would be online by 2030, includes construction of the turnout, construction of the BPS with a capacity of 40 cfs, and relining existing 49-inch and 43-inch pipeline from the BPS to Fowler Drive (approximately 3.6 miles in length). The second phase, which would be online by 2035, includes relining the existing 49-inch pipeline from Fowler Drive to Holland Road (approximately 3.2 miles in length). The third phase, which would be online by 2040, includes installation of a new 60-inch pipeline from Holland Road to Simpson Road (approximately 2.6 miles in length). The fourth phase, which would be online by 2045, includes the installation of a new 72-inch pipeline from the Skinner WTP to the turnout (approximately 2.0 miles in length), installation of new 60-inch parallel pipeline from the BPS to Fowler Drive (approximately 3.6 miles in length), and installation of new 48-inch parallel pipe from Fowler Drive to Holland Road (approximately 2.2 miles in length). Additional future improvements include increasing the flow of the pump station to 80 cfs in 2045 and 140 cfs at full buildout.

Potential Environmental Effects of the Proposed Project: In accordance with Section 15126 of the CEQA Guidelines, the EIR will assess the physical changes to the environment that would likely result from the construction and operation of the Project, including direct, indirect, and cumulative impacts and growth-inducing impacts. The EIR will provide an assessment of impacts for facilities and activities associated with Project implementation (CEQA Guidelines Section 15161). The analysis in the EIR will be programmatic in nature due to the phasing of the Project and the current availability of Project-specific details.

The District has determined that the proposed Project may have the potential to significantly impact air quality, biological resources, cultural resources and tribal cultural resources, energy, geology and soils, greenhouse gas emissions, hydrology and water quality, and noise. These issue areas will be evaluated in detail in the Draft EIR. It is anticipated that all other issue areas will be discussed in the *Environmental Effects Found Not to be Significant* section of the Draft EIR. The EIR will identify mitigation measures if necessary and feasible to reduce potentially significant impacts of the proposed Project. The EIR will also discuss alternatives to the proposed Project, including the CEQA-required "No Project" alternative.

Attachments:
Figure 1: Regional Location
Figure 2: Project Alignment

Lake Skinner Regional Water Transmission System



Source: Base Map Layers (ESRI, 2013)

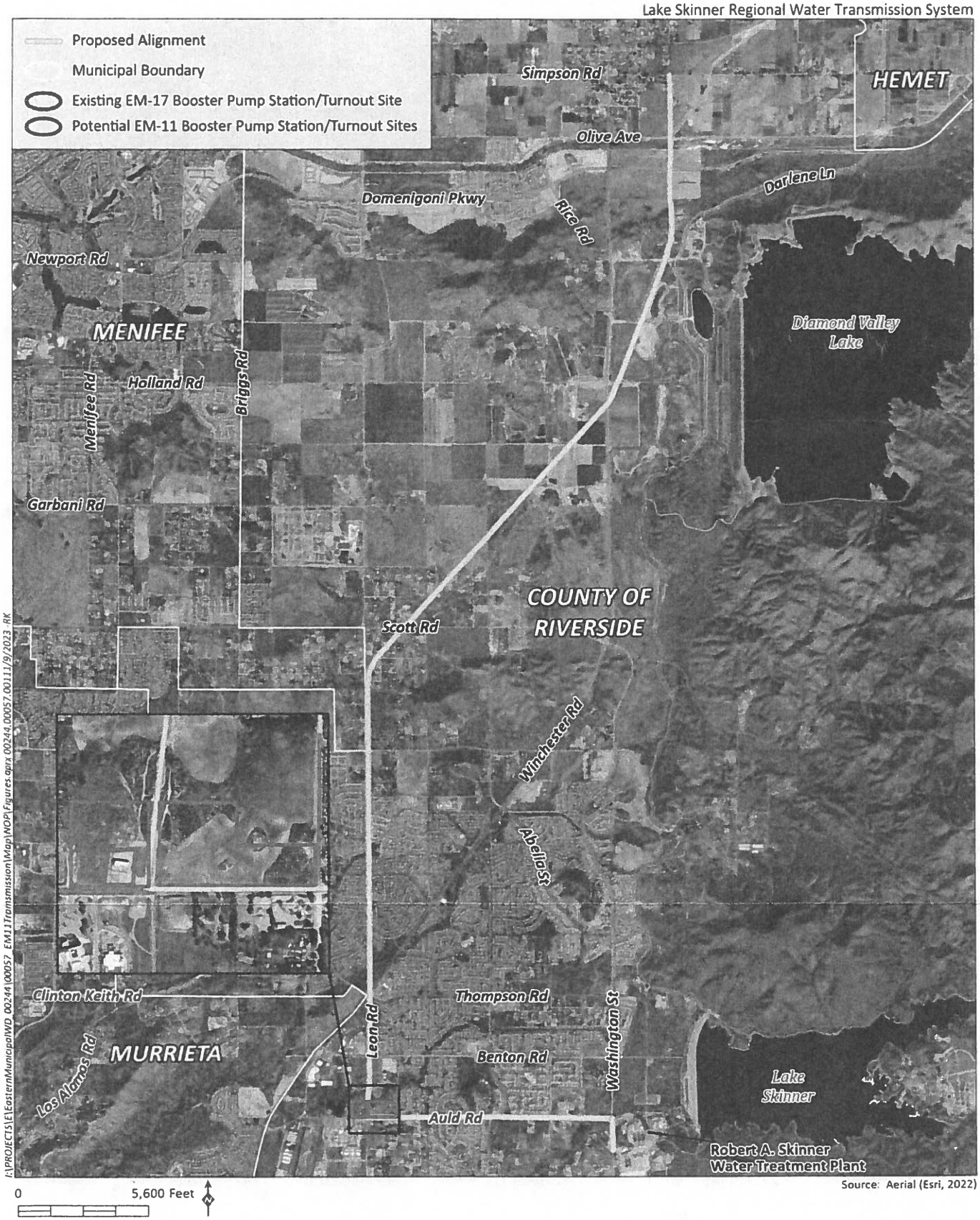
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Regional Location

Figure 1

Lake Skinner Regional Water Transmission System



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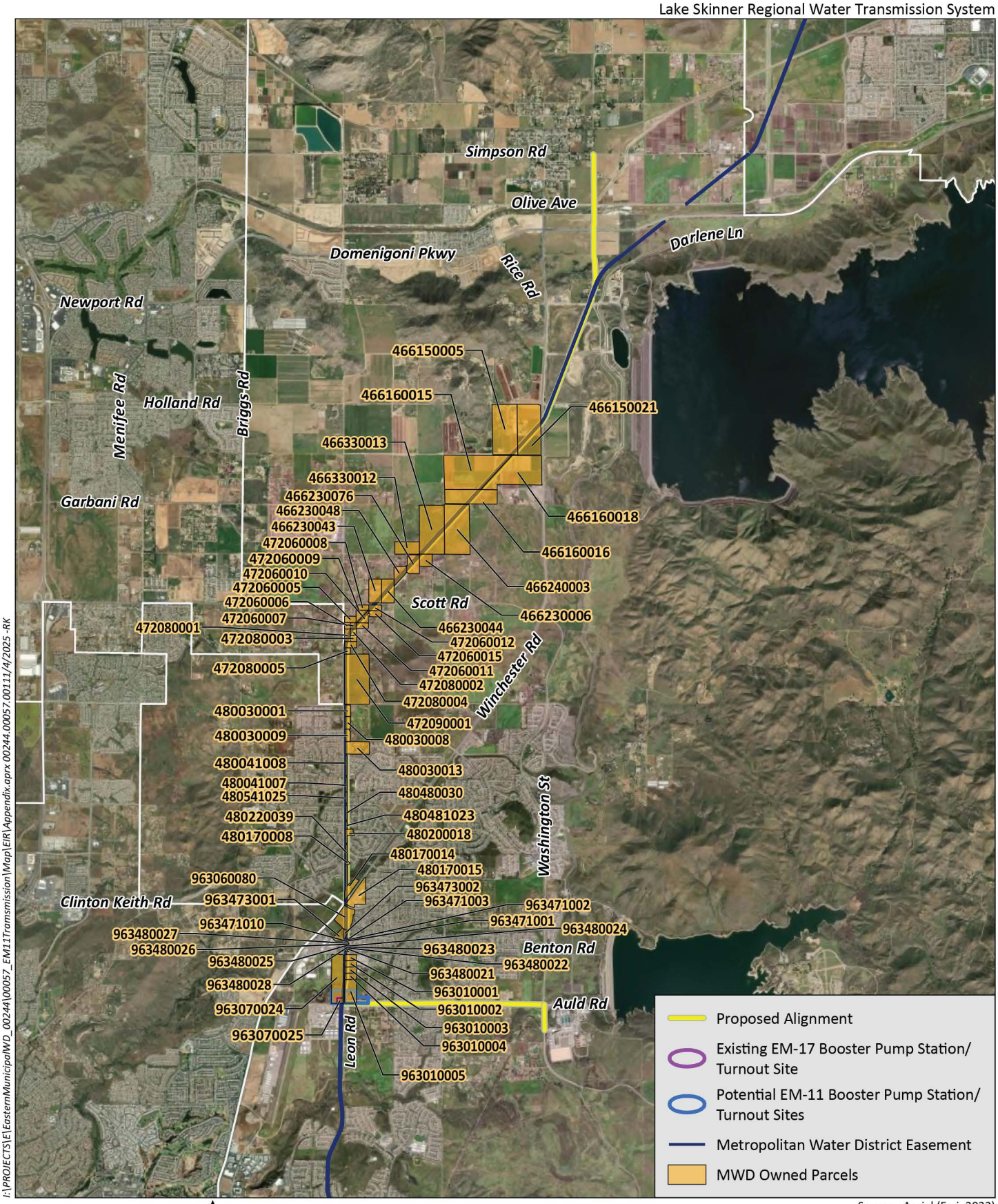
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Project Alignment

Figure 2

Appendix B

APN Map of Metropolitan-Owned Easement



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Source: Aerial (Esri, 2022)

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APN Map for Metropolitan-Owned Easement

Appendix C

Air Quality/Greenhouse Gas Emissions Technical Report

HELIX Environmental Planning

Eastern Municipal Water District Lake Skinner Regional Water Transmission System Project

Air Quality/Greenhouse Gas Emissions Technical Report

August 2026 | 00244.00057.001

Prepared for:

Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92572

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AAM	annual arithmetic mean
AB	Assembly Bill
APS	alternative planning strategy
AQMP	Air Quality Management Plan
AR2	IPCC's Second Assessment Report
AR4	IPCC's Fourth Assessment Report
AR5	IPCC's Fifth Assessment Report
BMP	best management practice
BPS	booster pump station
C_2F_6	hexafluoroethane
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBSC	California Building Standards Commissions
CCR	California Code of Regulations
CEC	California Energy Commissions
CEQA	California Environmental Quality Act
CF_4	tetrafluoromethane
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
CMU	cement masonry unit
CNS	central nervous system
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CY	cubic yard
District	Eastern Municipal Water District
DPM	diesel particulate matter

ACRONYMS AND ABBREVIATIONS (cont.)

EMWD	Eastern Municipal Water District
EO	Executive Order
g/L	grams per liter
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
hp	horsepower
hp-hr	horsepower-hour
HRA	health risk assessment
HVAC	heating, ventilation, and air conditioning
ICE	internal combustion engine
IPCC	Intergovernmental Panel on Climate Change
kWh	kilowatt-hours
LCFS	Low Carbon Fuel Standard
LST	localized significance threshold
MATES V	MATES V Multiple Air Toxics Exposure Study
mg/m^3	milligrams per cubic meter
MM	mitigation measure
MMT	million metric tons
MPO	metropolitan planning organization
MT	metric ton
MW	megawatt
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NHTSA	National Highway Traffic Safety Administration
NO	nitrogen oxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NOAA	National Oceanic and Atmospheric Administration
O_3	ozone
ODS	ozone-depleting substances
OEHHA	Office of Environmental Health Hazard Assessment

ACRONYMS AND ABBREVIATIONS (cont.)

Pb	lead
PFC	perfluorocarbon
PM	particulate matter
PM_{10}	particulate matter 10 microns or less in diameter
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
ppm	parts per million
PRC	Public Resources Code
PZ	pressure zone
Project	Lake Skinner Regional Water Transmission System Project
ROG	reactive organic gas
RTP	Regional Transportation Plan
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SD	San Diego
SF	Square feet/foot
SF_6	hexafluoride
SIP	State Implementation Plan
SLCP	short-lived climate pollutants
SO_2	sulfur dioxide
SO_X	sulfur oxides
SRA	source receptor area
T-BACT	Toxics Best Available Control Technology
TACs	toxic air contaminants
tpy	tons per year
UNFCCC	United Nations Framework Convention on Climate Change
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOC	volatile organic compound
WRCC	Western Regional Climate Center
WRCOG	Western Riverside Council of Governments
WTP	Water Treatment Plant

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EXECUTIVE SUMMARY

This report presents an assessment of potential air quality and greenhouse gas (GHG) emissions impacts resulting from the construction and operation of the proposed Eastern Municipal Water District (District) Lake Skinner Regional Water Transmission System Project (Project). The Project would be located within unincorporated areas of Riverside County, east of the cities of Menifee and Murrieta. The Project includes construction and operation of a new District-owned water service connection (also referred to as a turnout) to transfer treated water deliveries from The Metropolitan Water District of Southern California's (Metropolitan's) Skinner Water Treatment Plant (WTP), a new booster pump station (BPS) that would connect to the turnout to pump water to the District's service area, and new transmission pipelines to deliver water from Skinner WTP to the District's service area. The Project's main water conveyance pumps could be electrically powered or directly driven by compressed natural gas internal combustion engines (ICEs).

Construction of the project would not result in significant impacts related to conflicts with air quality plans, emissions of criteria pollutants and precursors exceeding the South Coast Air Quality Management District's (SCAQMD's) daily thresholds, exposure of sensitive receptors to substantial pollutant concentrations, or emissions of criteria pollutants and precursors exceeding the federal Clean Air Act (CAA) General Conformity de minimis levels.

The use of natural gas ICE directly driven pumps for Project BPS operation would result in potentially significant impacts related to:

- Conflicts with the SCAQMD's 2022 Air Quality Management Plan (AQMP)
- Exceedance of the SCAQMD's maximum daily emissions threshold for criteria pollutants and precursors.
- Exceedance of the SCAQMD's localized significance thresholds (LSTs) for criteria pollutants and precursors.
- Exceedance of the SCAQMD's Industrial GHG emissions threshold.
- Conflicts with the California Air Resources Board's (CARB's) 2022 Scoping Plan.
- Exceedance of the federal CAA General Conformity de minimis levels.

Mitigation measure options were analyzed that would require electric pumps only or allow combination of natural gas ICE pumps and electric pumps. The mitigation measure option requiring electric pumps only would reduce all potentially significant air quality and greenhouse gas emissions impacts to less than significant. However, it is unknown at this point in the planning process whether it would be feasible to implement the mitigation option requiring exclusively electric pumps, due to potential operational constraints such as the need to ensure uninterrupted service during emergencies that result in power outages. While the mitigation option requiring a combination of natural gas ICE pumps and electric pumps may be feasible and would reduce emissions, they would not be reduced to below a level of significance. The above list of impacts would be significant and unavoidable.

Depending on the final BPS design and location, the use of diesel emergency generators and natural gas ICE pumps could expose sensitive receptors to substantial toxic air contaminant concentrations. Mitigation requiring a health risk assessment (HRA) prior to installing diesel emergency generators and natural gas ICE pumps in the Project BPS would be required if health risks to nearby sensitive receptors exceed the SCAQMD thresholds and identify mitigation to reduce health risks. However, the magnitude of potential health risks and the availability of feasible mitigation to reduce health risks are unknown and impacts to sensitive receptors would be significant and unavoidable. Project-generated traffic would not result in a carbon monoxide hot spot and the Project would not generate other emissions (such as those leading to odors) that would affect a substantial number of people.

1.0 INTRODUCTION

This report presents an assessment of potential air quality and greenhouse gas (GHG) emissions impacts during construction and operation of the Eastern Municipal Water District (District) Lake Skinner Regional Water Transmission System Project (Project). This report has been prepared to support environmental review in accordance with the California Environmental Quality Act (CEQA; California Public Resources Code [PRC] §21000 et seq.); State CEQA Guidelines (California Code of Regulations [CCR], Title 14, §15000 et seq.).

1.1 PROJECT LOCATION

The proposed Project would be located within unincorporated areas of Riverside County, east of the cities of Menifee and Murrieta. The transmission pipelines would extend in an overall northern direction from The Metropolitan Water District of Southern California's (Metropolitan's) Skinner Water Treatment Plant (WTP) approximately 14 miles through the southern Perris Valley area to the community of Winchester. The new booster pump station (BPS) and turnout would be sited near the intersection of Auld Road and Leon Road, approximately two miles west of the Skinner WTP. See Figure 1, *Regional Location*, and Figure 2, *Project Alignment*.

1.2 PROJECT DESCRIPTION

The Project includes construction and operation of three main components: (1) a new District-owned water service connection (also referred to as a turnout) to transfer treated water deliveries from the Skinner WTP to the District; (2) a new BPS that would connect to the turnout to pump water to the District's service area; and (3) new transmission pipelines to deliver water from Skinner WTP to the District's service area. The transmission pipelines would extend in an overall northern direction from the Skinner WTP approximately 14 miles through the southern Perris Valley area to the community of Winchester and become part of a "backbone" system of high-pressure transmission lines providing service to the District's service area.

Collectively, these components comprise the Project and would be sized to meet the buildout demand condition of 140 cubic feet per second (cfs) of additional treated water supplies.

1.2.1 Description of Proposed Project Components

As discussed above, the components of the Project include a new turnout, a new BPS, and new transmission pipelines. The Project components would be implemented in four phases, as outlined in Table 1, *Project Phasing*, and shown in Figure 3, *Project Phasing.* The individual components are described by phase in further detail below.

Table 1
PROJECT PHASING

Phase	Component	Pipeline Stationing	Design Flow	Online Date
1	Construct turnout	N/A	140 cfs	2030
	Construct BPS (including electrical upgrades)	N/A	40 cfs	2030
	Reline existing SD Pipeline 1 or 2 from BPS to Fowler Drive	2.0 – 5.6 M.P. (3.6 miles long)	40 cfs	2030
2	Reline existing SD Pipeline 1 or 2 from Fowler Drive to Holland Road	5.6 – 8.8 M.P. (3.2 miles long)	40 cfs	2035
3	Install new 60-inch pipeline from Holland Road to Simpson Road	8.8 – 11.4 M.P. (2.6 miles long)	40 cfs	2040
4	Install new 72-inch pipeline from Skinner WTP to turnout	0.0 – 2.0 M.P. (2.0 miles)	80 cfs (2045) and 140 cfs (buildout)	2045
	Install new 60-inch parallel pipe from BPS to Fowler Drive	2.0 – 5.6 M.P. (3.6 miles)	80 cfs (2045) / 140 cfs (buildout in 2080)	2045
	Install new 48-inch parallel pipe from Fowler Drive to Holland Road	5.6 – 8.8 M.P (3.2 miles)	80 cfs (2045) / 140 cfs (buildout in 2080)	2045

Source: Black & Veatch 2021
M.P. = mile post; cfs= cubic feet per second

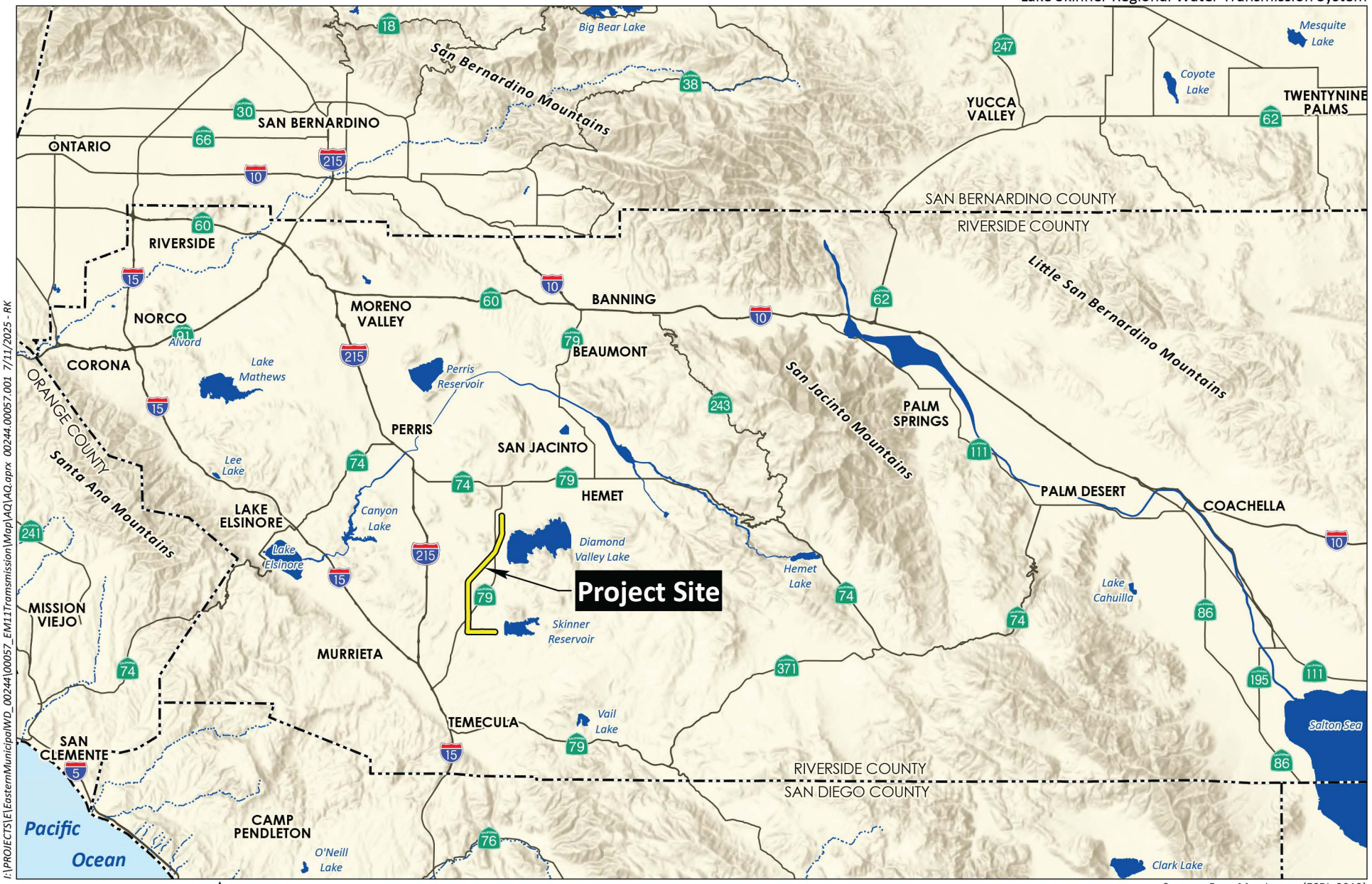
1.2.1.1 Phase 1

Phase 1 of the Project would involve construction of the turnout and BPS near the intersection of Auld Road and Leon Road (see Figure 3). The turnout and BPS would be located within a parcel that is either already owned by the District or would be acquired by the District to construct these facilities. The turnout would initially connect to Metropolitan's existing 96-inch-diameter Auld Valley Pipeline, which travels from the Skinner WTP to the District's existing EM-17 turnout located at the northwestern corner of the intersection of Auld Road and Leon Road. The Auld Valley Pipeline has an available capacity of 80 cfs and would be used to convey water from the Skinner WTP to the proposed turnout/BPS during Phases 1, 2, and 3 of the Project. Water received at the new turnout would be conveyed to the new BPS, which would be located adjacent to the turnout, and then north through transmission pipelines to the District's 1627 pressure zone (PZ). Details regarding the turnout, BPS, and transmission pipeline that would be constructed during Phase 1 are described below.

Turnout

As discussed above, the Project would involve the construction of a turnout near the intersection of Auld Road and Leon Road that would initially connect to Metropolitan's existing Auld Valley Pipeline. The turnout would provide the connection point to transfer treated water from the Skinner WTP (conveyed through the existing Auld Valley Pipeline) to proposed facilities (BPS and transmission pipelines) owned and operated by the District. The turnout connection would consist of equipment housed in two underground vaults (rooms) spaced about 30 feet apart. The turnout would change the direction of the water flow and regulate the pressure and velocity from the Metropolitan pipeline to the District's facilities.

Lake Skinner Regional Water Transmission System



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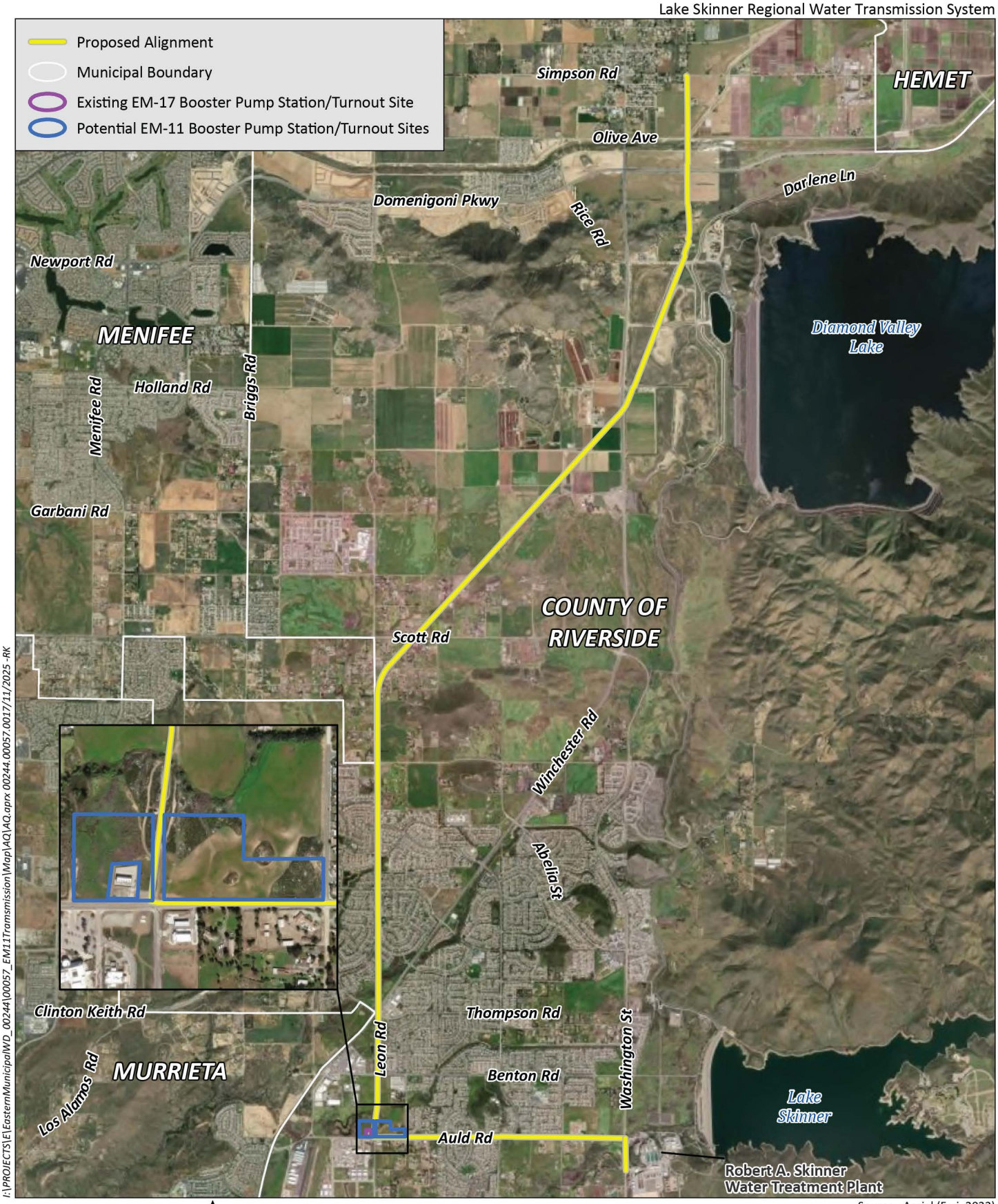
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Source: Base Map Layers (ESRI, 2013)

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Regional Location

Figure 1



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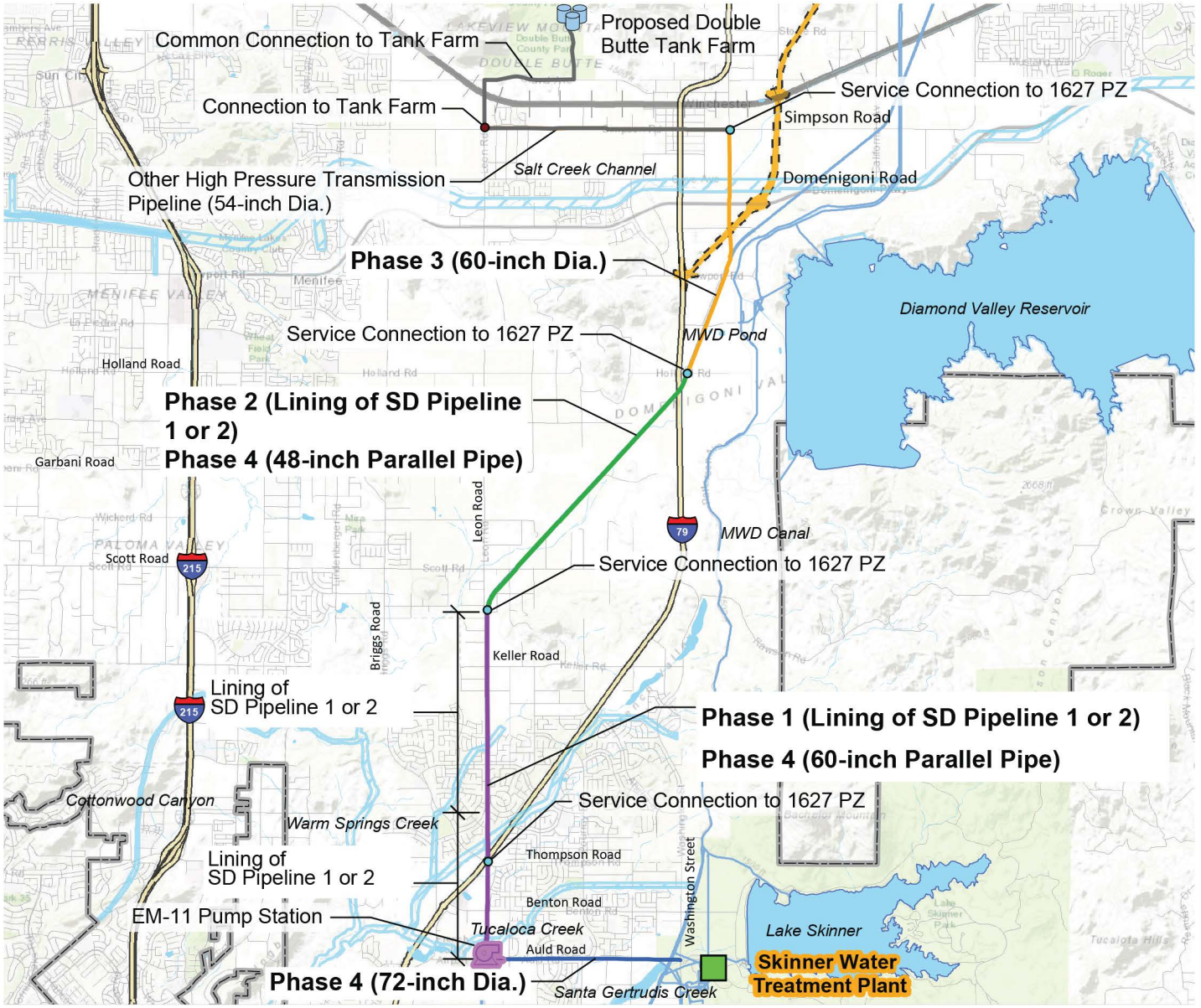
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Source: Aerial (Esri, 2022)

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Project Alignment

Figure 2



Source: Black & Veatch 2025

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HELIX Environmental Planning

Project Phasing

Figure 3

Valve Vault: The valve vault would be an approximately 30-foot-long, 20-foot-wide, and 16-foot-deep underground room with concrete walls. The valve vault would house a valve or valves that would serve as the isolation point between Metropolitan and the District's systems. The vault could include other equipment such as a sump pump, ventilation equipment, lighting, etc.

Meter Vault: From the valve vault, the water would flow to the meter vault. The meter vault would be an approximately 40-foot-long, 20-foot-wide, and 16-foot-deep underground room with concrete walls. The vault would house flowmeters that would provide flow rate and volume information to Metropolitan. The meter vault could include other equipment such as a sump pump, ventilation equipment, lighting, etc. See Figure 4, *Proposed Turnout Design*.

Booster Pump Station

The new BPS, located at the intersection of Auld Road and Leon Road adjacent to the proposed turnout, would receive treated water from the Skinner WTP via the existing Auld Valley Pipeline and proposed turnout. The BPS would function to increase water pressure in the proposed transmission pipelines north of the BPS (described below) enabling delivery of water to the District's 1627 PZ.

The BPS would be located on the north side of Auld Road, either to the west or east of Leon Road. For planning purposes, a 350-foot by 500-foot site (approximately four acres) is proposed to accommodate the BPS. The site layout assumes a 25-foot landscaped setback along the frontage road. An access driveway with motorized rolling access gates would provide ingress/egress to the site, with an 8-foot cement masonry unit (CMU) perimeter wall securing the entire site. A service road would encircle the pump building allowing for maintenance access and operating space, including for the removal and maintenance of BPS components (pumps, motors, valves, pipe, generators, etc.). The service road includes parking spaces for maintenance staff and service equipment.

Mechanical and electrical pumping equipment would be located within a common, single-story masonry block building. It would include adequate space to accommodate the number of pumps needed for the planned maximum buildout capacity of 140 cfs. The initial pumps providing 40 cfs capacity would be installed first, and open slots would be available to bring in additional pumps to increase capacity as needed in the future. While plans for powering the pump station have not been fully designed at this time, the Project main water conveyance pumps could be electrically powered or directly driven by natural gas internal combustion engines (ICEs). Because they have the potential for greater emissions, the analysis in this report conservatively assumes ICE pumps that would be fueled by natural gas.

Other components of the conceptual site plan include surge control systems that would minimize damage to the downstream pipelines in the event of sudden power loss; emergency backup diesel engine generators to provide power to the station in the event of a power outage; and a chemical building that would include disinfection equipment. Conditioning chemicals used for disinfection would be sodium hypochlorite (chlorination), or sodium hypochlorite and liquid ammonium sulfate (chloramination). The disinfection process (chlorination or chloramination) would be determined during preliminary design. While the design of the on-site stormwater management is not yet finalized, for planning purposes a detention basin is included in the site plan, which would be within the approximately four-acre site.

The power distribution system for the BPS would require connection to electric utility service provided by Southern California Edison (SCE). It is anticipated that the connection would be provided by existing

SCE transmission lines that run adjacent to the proposed BPS site. To get from the main transmission lines to the BPS site, power lines could be installed via underground ducting or overhead pole lines. The power would be delivered to an outdoor utility substation transformer provided by SCE that would be located at the BPS site and would be accessible via an access gate. The power needed to provide 40 cfs of pumping capacity would be installed during the initial BPS construction. Additional power capacity (if needed) for capacity beyond 40 cfs would be constructed in future years (2045 or beyond). The BPS would also include an electrical connection to allow one or multiple portable diesel engine generators (estimated at 300 kilowatts to 1 megawatt each) to be connected to the station in the event the onsite generator fails. See Figure 5, *Conceptual Pump Station Site Plan*.

Transmission Pipeline

As part of Phase 1 of the Project, the District would reline either existing San Diego (SD) Pipeline 1 or SD Pipeline 2 with steel pipe from the new BPS at the intersection of Auld Road and Leon Road north to a location near the Leon Road/Fowler Drive intersection. Within this reach, SD Pipelines 1 and 2 are located within a Metropolitan easement that parallels the eastern side of Leon Road. The relining of SD Pipeline 1 or SD Pipeline 2 as part of Phase 1 of the Project would terminate at a service connection to the District's 1627 PZ, located at the intersection of Leon Road and Fowler Drive. The District's use of Metropolitan's SD Pipeline 1 or SD Pipeline 2 and associated easement would require approval by Metropolitan and/or the sale/transfer of these components from Metropolitan to the District. Whichever of SD Pipeline 1 and SD Pipeline 2 is not relined as part of the Project would continue to convey surface water flows from Diamond Valley Lake to the downstream location.

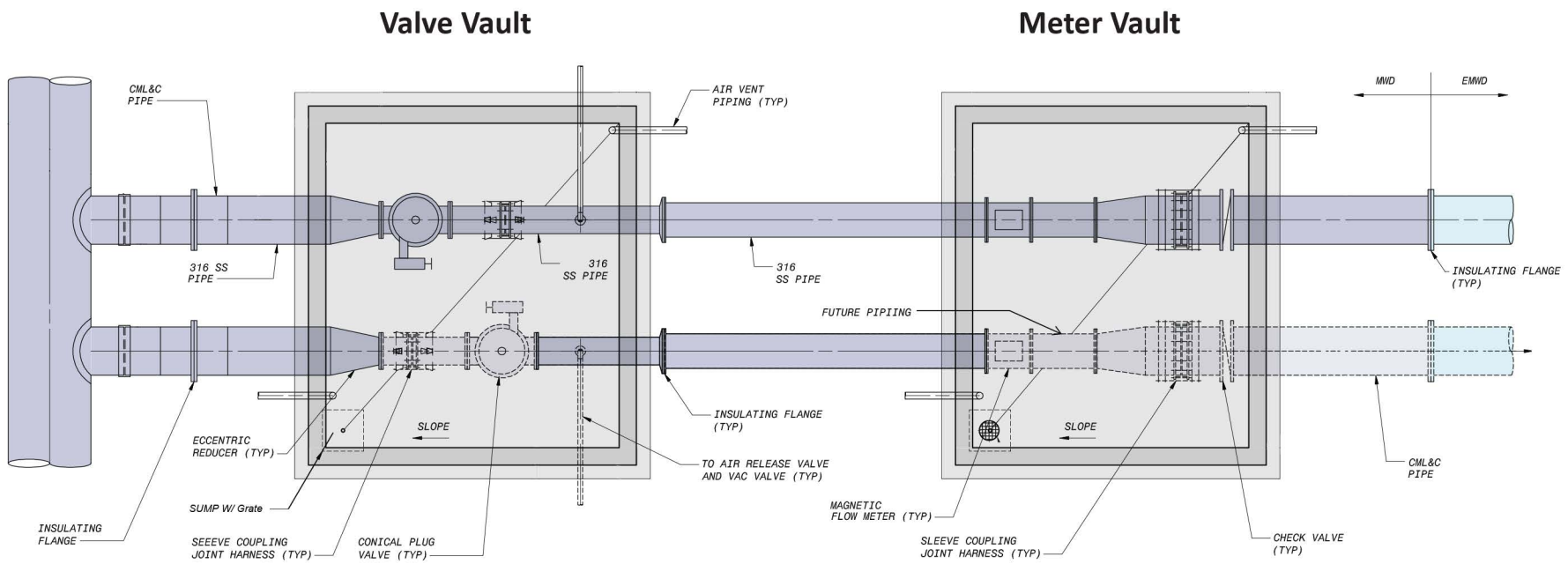
1.2.1.2 Phase 2

Phase 2 consists of relining approximately 16,900 feet of either SD Pipeline 1 or SD Pipeline 2 that extends from the service connection near the Leon Road/Fowler Drive intersection in a northeastern direction within a Metropolitan easement to a service connection to the District's 1627 PZ at Holland Road east of SR-79. As mentioned above, the District's use of Metropolitan's SD Pipeline 1 or SD Pipeline 2 and associated easement would require approval by Metropolitan and/or the sale/transfer of these components from Metropolitan to the District. Whichever of SD Pipeline 1 and SD Pipeline 2 is not relined as part of the Project would continue to convey surface water flows from Diamond Valley Lake to the downstream location.

1.2.1.3 Phase 3

Phase 3 consists of installing approximately 6,600 feet of new 60-inch-diameter pipeline from the service connection at Holland Road in a northeastern direction to approximately 1,300 feet north of Newport Road. This reach is within Metropolitan's easement adjacent to SD Pipelines 1 and 2. The District's use of Metropolitan's easement would require approval by Metropolitan and/or the sale/transfer of the easement from Metropolitan to the District. At the point 1,300 feet north of Newport Road, the pipeline would leave Metropolitan's easement and be located within the existing public right-of-way of the unpaved Patterson Avenue for another approximately 7,000 feet until it reaches Simpson Road. The new pipeline is anticipated to be welded steel pipe with cement-mortar lining and coating.

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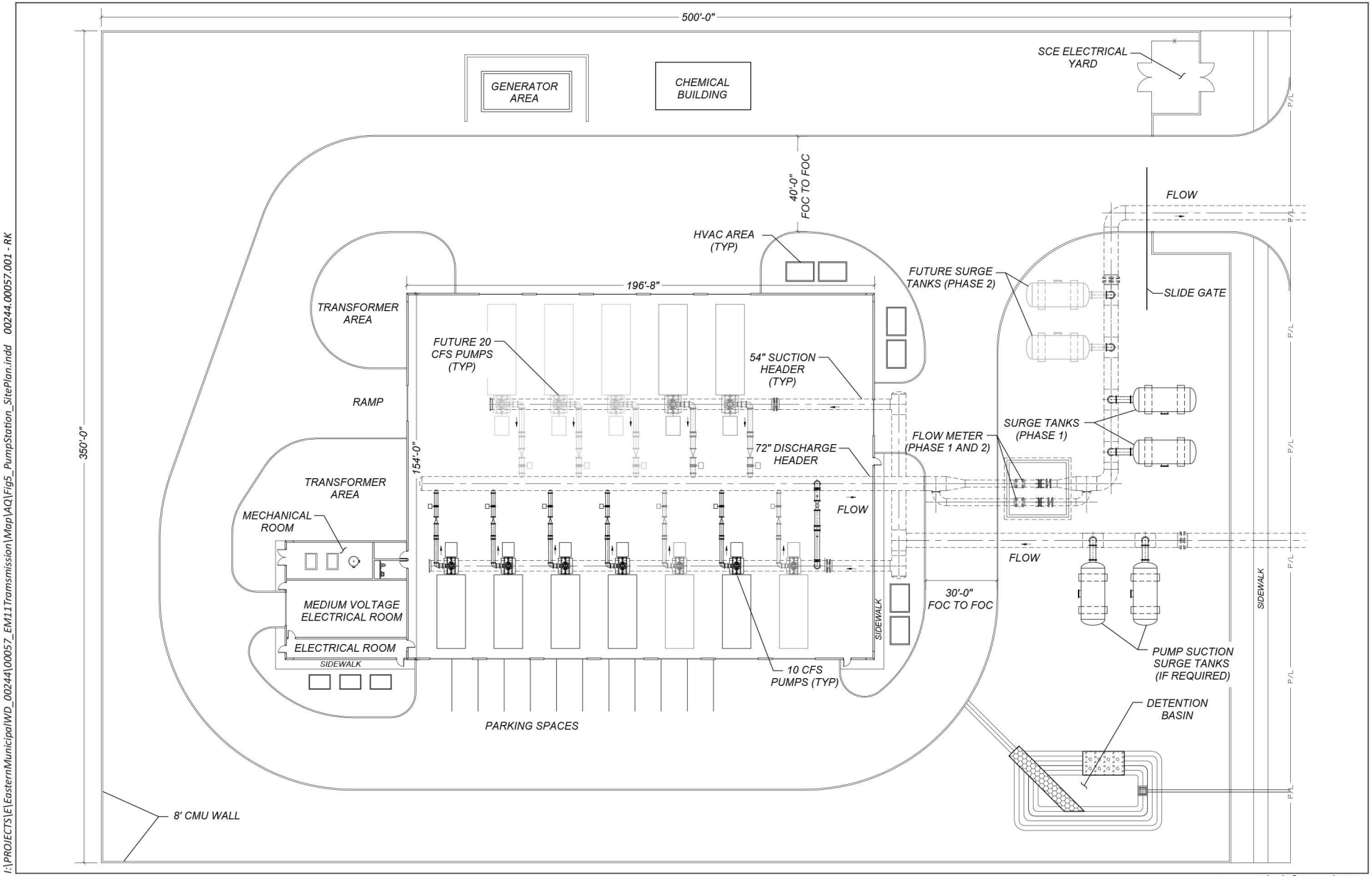


Source: Black & Veatch 2021

HELIX Environmental Planning

Proposed Turnout Design

Figure 4



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Source: Black & Veatch 2021

HELIX Environmental Planning

Conceptual Pump Station Site Plan

Figure 5

1.2.1.4 Phase 4

The final phase, Phase 4, consists of installing a new pipeline parallel to the portions of SD Pipeline 1 or 2 relined during Phase 1 (from the BPS to Fowler Drive) and Phase 2 (from Fowler Drive to Holland Road) to increase the transmission pipeline capacity from 40 to 140 cfs. The parallel pipe from the BPS to Fowler Drive would be 60 inches in diameter and would be constructed within Metropolitan's existing easement. Between Fowler Drive and Holland Road, the parallel pipe would be 48 inches in diameter and would also be constructed within Metropolitan's existing easement. The District's use of Metropolitan's easement would require approval by Metropolitan and/or the sale/transfer of the easement from Metropolitan to the District. The new pipeline is anticipated to be welded steel pipe with cement-mortar lining and coating. Both the new pipeline installed during Phase 4 and the pipeline relined during Phase 2 (which would be parallel to each other) would connect to the 60-inch-diameter pipeline installed during Phase 3 at a single location at Holland Road using a manifold (i.e., a larger pipe section into which smaller pipes lead).

It is assumed that capacity would no longer be available in the Auld Valley Pipeline at Phase 4 of the Project and that a new 72-inch-diameter pipeline would be installed within Borel Road and Auld Road, connecting the new turnout and BPS to the Skinner WTP. The new pipeline would function as the suction pipe for the BPS. The minimum permanent easement or right-of-way width required for operation of the pipeline would be 60 feet. Where the pipeline would be constructed outside or at the edge of the public right-of-way, attempts shall be made to provide approximately 30 feet on either side of the pipeline.

Pipeline appurtenances would be required for the proper operation and maintenance of the transmission pipelines. Appurtenances would include:

- combination air-release and vacuum valves, which would be located in small above-grade vault structures, to relieve excess pressure or vacuum in the pipe;
- blow-offs, which would be located in below-grade vault structures, to dewater the pipeline into natural creeks, channels, waterways, and/or storm drains when a shutdown of the pipeline is needed;
- isolation valves, which would be located in below-grade vault structures, to stop the flow of water in a particular direction;
- service connections to the District's 1627 PZ;
- discharge connections; and
- other miscellaneous appurtenances.

2.0 REGULATORY SETTING

The Project site is located within the western Riverside County portion of the South Coast Air Basin (SCAB). Air quality in the SCAB is regulated by the U.S. Environmental Protection Agency (USEPA) at the federal level, by the California Air Resources Board (CARB) at the state level, and by the South Coast Air Quality Management District (SCAQMD) at the regional level.

2.1 AIR QUALITY

2.1.1 Air Pollutants of Concern

2.1.1.1 Criteria Pollutants

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. In general, criteria air pollutants include the following compounds:

- Ozone (O_3)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Particulate matter (PM), which is further subdivided:
  - Coarse PM, 10 microns or less in diameter (PM_{10})
  - Fine PM, 2.5 microns or less in diameter ($PM_{2.5}$), a subset of PM_{10}.
- Sulfur dioxide (SO_2)
- Lead (Pb)

Criteria pollutants can be emitted directly from sources (primary pollutants; e.g., CO, SO_2, PM_{10}, $PM_{2.5}$, and lead), or they may be formed through chemical and photochemical reactions of precursor pollutants in the atmosphere (secondary pollutants; e.g., ozone, NO_2, PM_{10}, and $PM_{2.5}$). PM_{10} and $PM_{2.5}$ can be both primary and secondary pollutants. The principal precursor pollutants of concern are reactive organic gases ([ROGs] also known as volatile organic compounds [VOCs])[1] and nitrogen oxides (NO_X).

The descriptions of sources and general health effects for each of the criteria air pollutants are shown in Table 2, *Summary of Common Sources and Human Health Effects of Criteria Air Pollutants*, based on information provided by CARB and the USEPA (CARB 2025a; USEPA 2025a). Specific adverse health effects on individuals or population groups induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables such as cumulative concentrations, local meteorology and atmospheric conditions, and the number and characteristics of exposed individuals (e.g., age, gender). Criteria pollutant precursors (ROG and NO_X) affect air quality on a regional scale, typically after significant delay and distance from the pollutant source emissions. Health effects related to ozone and NO_2 are, therefore, the product of emissions generated by numerous sources throughout a region. Emissions of criteria pollutants from vehicles traveling to or from the Project site (mobile emissions) are distributed nonuniformly in location and time throughout the region, wherever the vehicles may travel. As such, specific health effects from these criteria pollutant emissions cannot be meaningfully correlated to the incremental contribution from the Project.

[1] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

Table 2
SUMMARY OF COMMON SOURCES AND HUMAN HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS

Pollutant	Major Man-Made Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to climate change and nutrient overloading, which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrogen oxides (NO_X) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles, and dyes.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and other sources.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO_2)	A colorless, non-flammable gas formed when fuel containing sulfur is burned, when gasoline is extracted from oil, or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid, which can damage marble, iron, and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CARB 2025a; USEPA 2025a

2.1.1.2 Toxic Air Contaminants

The Health and Safety Code (§39655, subd. (a).) defines a toxic air contaminant (TAC) as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal Clean Air Act (CAA) (42 United States Code Section 7412[b]) is a TAC. Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health.

Diesel Particulate Matter

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is referred to as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns in diameter (CARB 2025b). Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, CARB identified DPM as a TAC based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a notable effect on California's population—it is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2025b).

Natural Gas Internal Combustion Engine Exhaust

The exhaust from natural gas ICE-powered pumps contains organic compounds that have been classified as TACs, including acetaldehyde, acrolein, benzene, 1,3-butadiene, ethylbenzene, formaldehyde, propionaldehyde, toluene, and xylenes (USEPA 2024).

Acetaldehyde – Acute exposure to acetaldehyde results in effects including irritation of the eyes, skin, and respiratory tract. Symptoms of chronic intoxication of acetaldehyde resemble those of alcoholism. Acetaldehyde is considered a probable human carcinogen (USEPA 2000a).

Acrolein – Acute inhalation exposure to acrolein may result in upper respiratory tract irritation and congestion. No information is available on reproductive, developmental, or carcinogenic effects of acrolein exposure in humans (USEPA 2009a).

Benzene – Benzene is a potent carcinogen and one of the highest-risk air pollutants regulated by CARB. Acute inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic inhalation exposure to benzene has caused various disorders in the blood. Benzene is classified as a known human carcinogen for all routes of exposure (USEPA 2012a).

1,3-Butadiene – Acute exposure to 1,3-butadiene by inhalation in humans results in irritation of the eyes, nasal passages, throat, and lungs. Epidemiological studies have reported a possible association between 1,3-butadiene exposure and cardiovascular diseases. Epidemiological studies of workers in rubber plants have shown an association between 1,3-butadiene exposure and increased incidence of leukemia (UAEPA 2009b).

Ethylbenzene – Acute exposure to ethylbenzene in humans results in respiratory effects, such as throat irritation and chest constriction, irritation of the eyes, and neurological effects such as dizziness (USEPA 2000b).

Propionaldehyde – No information is available on the acute, chronic, reproductive, developmental or carcinogenic effects of propionaldehyde in humans. Animal studies have reported that exposure to high levels of propionaldehyde, via inhalation, results in anesthesia and liver damage, and intraperitoneal exposure results in increased blood pressure (USEPA 2000c).

Toluene – The central nervous system (CNS) is the primary target organ for toluene toxicity in both humans and animals for acute and chronic exposures. CNS dysfunction and narcosis have been frequently observed in humans acutely exposed to elevated airborne levels of toluene; symptoms include fatigue, sleepiness, headaches, and nausea. Chronic inhalation exposure of humans to toluene also causes irritation of the upper respiratory tract and eyes, sore throat, dizziness, and headache (USEPA 2012b).

Xylenes – Acute inhalation exposure to mixed xylenes in humans results in irritation of the eyes, nose, and throat, gastrointestinal effects, and neurological effects. Chronic inhalation exposure of humans to mixed xylenes results primarily in CNS effects, such as headache, dizziness, fatigue, tremors, and incoordination; respiratory, cardiovascular, and kidney effects have also been reported (USEPA 2000d).

2.1.2 Federal Air Quality Regulations

2.1.2.1 Federal Clean Air Act

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to the health and welfare of the public. The USEPA is responsible for enforcing the CAA of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several criteria pollutants. On February 7, 2024, the USEPA announced a final rule to lower the annual arithmetic mean (AAM) primary NAAQS for $PM_{2.5}$ from 12 µg/m^3 to 9 µg/m^3. The new final rule retains the existing 24-hour primary NAAQS for $PM_{2.5}$ of 35 µg/m^3 and the existing AAM secondary NAAQS for $PM_{2.5}$ of 15.0 µg/m^3 (USEPA 2025b). Table 3, *Ambient Air Quality Standards*, shows the federal and state ambient air quality standards for criteria pollutants.

Table 3
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards Primary[1,2]	Federal Standards Secondary[3]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	9 µg/m^3	15.0 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
SO_2	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	–	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	Same as Primary
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	No Federal Standards	No Federal Standards
Sulfates	24 Hour	25 µg/m^3	No Federal Standards	No Federal Standards
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	No Federal Standards	No Federal Standards
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	No Federal Standards	No Federal Standards

Source: CARB 2016; USEPA 2025b

[1] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect public health.

[2] The AAM primary NAAQS for $PM_{2.5}$ was reduced from 12 µg/m^3 to 9 µg/m^3 by a USEPA final rule issued on February 7, 2024.

[3] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

O_3 = ozone; ppm: parts per million; µg/m^3 = micrograms per cubic meter; PM_{10} = particulate matter with an aerodynamic diameter of 10 microns or less; AAM = Annual Arithmetic Mean; $PM_{2.5}$ = fine particulate matter; CO = carbon monoxide; mg/m^3 = milligrams per cubic meter; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide; km = kilometer; – = No Standard

The USEPA has classified air basins (or portions thereof) as being in "attainment," "nonattainment," or "unclassified" for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. The Project site is located within the South Coast Air Basin (SCAB) and, as such, is in an area designated a nonattainment area for certain pollutants that are

regulated under the CAA. Table 4, *South Coast Air Basin Attainment Status*, lists the federal and state attainment status of the SCAB for the criteria pollutants. The USEPA classifies the SCAB as in attainment for CO, $PM_{10,}$ $NO_{2,}$ SO_2, and lead; in extreme nonattainment for 1-hour and 8-hour ozone; and in serious nonattainment for $PM_{2.5}$ with respect to federal air quality standards.

Table 4
SOUTH COAST AIR BASIN ATTAINMENT STATUS

Criteria Pollutant	Federal Designation	State Designation
Ozone (O_3) (1-hour)	(No federal standard)	Nonattainment
Ozone (O_3) (8-hour)	Extreme Nonattainment	Nonattainment
CO (Carbon Monoxide (CO)	Attainment (Maintenance)	Attainment
Respirable Particulate Matter (PM_{10})	Attainment (Maintenance)	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Serious Nonattainment	Nonattainment
Nitrogen Dioxide (NO_2)	Attainment (Maintenance)	Attainment
Sulfur Dioxide (SO_2)	Unclassifiable/Attainment	Unclassifiable/Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Attainment
Visibility	(No federal standard)	Attainment

Source: SCAQMD 2016a; USEPA 2025c

[1] The federal 1-hour standard of 12 ppm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.

[2] At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

2.1.3 California Air Quality Regulations

2.1.3.1 California Clean Air Act

The federal CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB, a part of the CalEPA, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the California Ambient Air Quality Standards (CAAQS). CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In addition to primary and secondary AAQS, the state has established a set of episode criteria for ozone, CO, NO_2, SO_2, and PM. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that threaten public health. Table 4 lists the state attainment status of the SCAB for the criteria pollutants. Under state designation, the SCAB is currently in attainment for CO, $NO_{2,}$ $SO_{2,}$ and lead; and in nonattainment for ozone, $PM_{10,}$ and $PM_{2.5}$.

2.1.3.2 State Implementation Plan

The CAA requires areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop plans, known as State Implementation Plans (SIPs). SIPs are comprehensive plans that describe how an area will attain the NAAQS. The 1990 amendments to the CAA set deadlines for attainment based on the severity of an area's air pollution problem.

SIPs are not single documents—they are a compilation of new and previously submitted plans, programs (e.g., monitoring, modeling, permitting), district rules, state regulations, and federal controls. Many of California's SIPs rely on a core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB forwards the SIP revisions to the USEPA for approval and publication in the Federal Register. The Code of Federal Regulations (CFR) Title 40, Chapter I, Part 52, Subpart F, Section 52.220 lists all the items that are included in the California SIP (CARB 2025c). At any one time, several California submittals are pending USEPA approval.

2.1.4 Local Regulations

2.1.4.1 South Coast Air Quality Management District

Air quality in the SCAB portion of Riverside County is regulated by the SCAQMD. As a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), County transportation commissions, and local governments and cooperates actively with all federal and state government agencies. The SCAQMD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary.

Air Quality Management Plan

The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources. It has responded to this requirement by preparing a sequence of Air Quality Management Plans (AQMPs).

On December 2, 2022, the SCAQMD adopted the 2022 AQMP, which is a regional and multi-agency effort (SCAQMD, CARB, SCAG, and USEPA). The 2022 AQMP represents a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures. The plan seeks to achieve multiple goals in partnership with other entities promoting reductions in criteria pollutant, GHGs, and toxic risk, as well as efficiencies in energy use, transportation, and goods movement. Included in the 2022 AQMP are updated strategies and control measures to address the designation of the SCAB as an “extreme” nonattainment area for the 2015 NAAQS 8-hour ozone standard. To meet the 2015 NAAQS ozone standard, an additional 67 percent reduction of NO_X will be required compared to the reductions forecast to occur by 2037 (as required by current adopted rules and regulations). Achieving the NO_X reductions will require extensive use of zero emission technologies across all stationary and mobile sources. The overwhelming majority of NO_X emissions are from heavy-duty trucks, ships and other State and federally regulated mobile sources that are mostly beyond the SCAQMD’s control. The region will not meet the NAAQS ozone standard absent significant federal action. In addition to federal action, the 2022 AQMP requires substantial reliance on future deployment of advanced technologies to meet the NAAQS ozone standard (SCAQMD 2022).

The AQMP, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to CARB, which develops the California SIP. The SIP relies on the same information from SCAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The current federal and state attainment status for the SCAB is presented above, in Table 4.

Carbon Monoxide Redesignation Request and Maintenance Plan

Prior to 2007, the SCAB was designated as a serious nonattainment area for CO. Under the federal CAA, an area can be redesignated as attainment if, among other requirements, the USEPA determines that the NAAQS have been attained, and approves a maintenance plan to provide for the maintenance of the NAAQS for at least 20 years after the redesignation. As a result of state and local control strategies, the SCAB has not exceeded the CO NAAQS since 2002. In March 2005, the SCAQMD adopted a CO Redesignation Request and Maintenance Plan (SCAQMD 2005a) that provides for maintenance of the CO NAAQS over a 20-year period. The Maintenance Plan includes a maintenance demonstration, commitment to a future monitoring network, verification of continued attainment, a contingency plan, and provisions for contingency plan implementation. As a result of implementation of the Maintenance Plan, the USEPA redesignated the SCAB as attainment in 2007.

The 20-year maintenance period ended in 2025; however, the USEPA technically still monitors the SCAB as a maintenance area and will continue to do so until SCAQMD files a formal request to remove the maintenance status and the USEPA approves the request. Since implementation of the Maintenance Plan, CO concentrations have remained well below federal standards, meaning the SCAB has not been experiencing CO attainment issues requiring new or additional planning efforts. As a result, the regulatory planning focus has shifted towards ozone and $PM_{2.5}$, which remain the SCAB's primary attainment challenge.

Rules and Regulations

The following rules promulgated by the SCAQMD would be applicable to construction and/or operation of the Project.

Rule 401 – Visible Emissions: Limits the allowable opacity of air contaminant emissions from any single source (SCAQMD 2001).

Rule 402 – Nuisance: Prohibits the discharge of air contaminants, including odors, which cause injury, detriment, nuisance, or annoyance to any considerable number of persons (SCAQMD 1976).

Rule 403 – Fugitive Dust: Requires actions to prevent, reduce or mitigate anthropogenic fugitive dust emissions, including emissions from construction activities. Project construction would be required to implement all applicable fugitive dust best available control measures specified in Table 1 in the rule (SCAQMD 2005b).

Rule 1110.2 – Emissions from Gaseous- and Liquid Fueled Engines: Establishes concentration limits for VOC, NO_X, and CO in the exhaust of stationary ICE engines with 50 or more horsepower (hp) (SCAQMD 2019a).

2.2 GREENHOUSE GASES

2.2.1 Climate Change Overview

Global climate change refers to changes in average climatic conditions on Earth, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by atmospheric gases. These gases are commonly referred to as GHGs because they function like a greenhouse by letting sunlight in but preventing heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with: (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The temperature record shows a decades-long trend of warming, with Earth's average surface temperature in 2024 confirmed as the warmest on record. Per scientists at the National Aeronautics and Space Administration's [NASA's] Goddard Institute for Space Studies, global temperatures in 2025 were around 2.1 degrees Fahrenheit (°F) higher than the 1951-1980 average and 0.2 °F cooler than 2024 (NASA 2026). GHG emissions from human activities are the most significant driver of observed climate change since the mid-20th century (United Nations Intergovernmental Panel on Climate Change [IPCC] 2013). The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The statistical models show a "high confidence" that temperature increase caused by anthropogenic GHG emissions could be kept to less than two degrees Celsius relative to pre-industrial levels if atmospheric concentrations are stabilized at about 450 parts per million (ppm) carbon dioxide equivalent (CO_2e) by the year 2100 (IPCC 2014).

2.2.2 Types of Greenhouse Gases

The GHGs defined under California's Assembly Bill (AB) 32 include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Carbon Dioxide. CO_2 is the most important and common anthropogenic GHG. CO_2 is an odorless, colorless GHG. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of CO_2 include burning fuels, such as coal, oil, natural gas, and wood. Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. The atmospheric CO_2 concentration in 2010 was 390 ppm, 39 percent above the concentration at the start of the Industrial Revolution (about 280 ppm in 1750). The December 2025 monthly average CO_2 concentration was 427 ppm, a 53 percent increase since 1750 (National Oceanic and Atmospheric Administration [NOAA] 2025).

Methane. CH_4 is the main component of natural gas used in homes. A natural source of methane is from the decay of organic matter. Geological deposits known as natural gas fields contain methane, which is extracted for fuel. Other sources are from the decay of organic material in landfills, fermentation of manure, and cattle digestion.

Nitrous Oxide. N_2O is produced by both natural and human-related sources. N_2O is emitted during agricultural and industrial activities, as well as during the combustion of fossil fuels and solid waste.

Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production.

Hydrofluorocarbons. Hydrofluorocarbons are commonly used by federal agencies in a wide variety of applications, including refrigeration, air conditioning (AC), building insulation, fire extinguishing systems, and aerosols. HFCs have high global warming potential (GWP), raising concern about their impacts as they become increasingly used as replacements for ozone-depleting substances (ODS), and as economic growth spurs demand for new equipment, especially in the refrigeration/AC sector.

Perfluorocarbons. Perfluorocarbons are synthetic compounds containing only fluorine and carbon. They are generally colorless, odorless, non-flammable gases at environmental temperatures and, for the most part, chemically unreactive. PFCs replace chlorofluorocarbons (CFCs) in manufacturing semiconductors. They are also used as solvents in the electronics industry, and as refrigerants in some specialized refrigeration systems.

Sulfur Hexafluoride. SF_6 is an inorganic, odorless, colorless, nontoxic, non-flammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.

GHGs have long atmospheric lifetimes that range from one year to several thousand years. Long atmospheric lifetimes allow for GHG emissions to disperse around the globe. Because GHG emissions vary widely in the power of their climatic effects, climate scientists have established a unit called GWP. The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO_2. For example, a gas with a GWP of 10 is 10 times more potent than CO_2 over 100 years. CO_2e is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO_2e.

Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (AR2). In 2007, IPCC updated the GWP values based on the latest science at the time in its Fourth Assessment Report (AR4). The updated GWPs in the IPCC AR4 have begun to be used in recent GHG emissions inventories. In 2013 and again in 2024, IPCC updated the GWP values based on the latest science in its Fifth Assessment Report (AR5) and Sixth Assessment Report (IPCC 2013; IPCC 2024). However, United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines for national inventories require the use of GWP values from the AR4. To comply with international reporting standards under the UNFCCC, official emission estimates for California and the U.S. are reported using AR4 GWP values, and statewide and national GHG inventories have not yet updated their GWP values to the AR5 values. Project GHG emissions in this analysis are reported using the AR4 GWP values (IPCC 2007).

By applying the GWP ratios, project-related CO_2e emissions can be tabulated in metric tons (MT) per year. Typically, the GWP ratio corresponding to the warming potential of CO_2 over a 100-year period is used as a baseline. The atmospheric lifetime and GWP of selected GHGs are summarized in Table 5, *Global Warming Potentials and Atmospheric Lifetimes*.

Table 5
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES

Greenhouse Gas	Atmospheric Lifetime (years)	IPCC SAR GWP	IPCC AR4 GWP	IPCC AR5 GWP	IPCC AR6 GWP
Carbon Dioxide (CO_2)	50-200	1	1	1	1
Methane (CH_4)	12	21	25	28	28.0, 29.8[1]
Nitrous Oxide (N_2O)	114	310	298	265	273
HFC-134a	14	1,300	1,430	1,300	1,530
PFC: Tetrafluoromethane (CF_4)	50,000	6,500	7,390	6,630	7,380
PFC: Hexafluoroethane (C_2F_6)	10,000	9,200	12,200	11,100	12,400
Sulfur Hexafluoride (SF_6)	3,200	23,900	22,800	23,500	24,300

Source: IPCC 2007; IPCC 2013; IPCC 2024
IPCC = Intergovernmental Panel on Climate Change; GWP = global warming potential; HFC = hydrofluorocarbon; PFC = perfluorocarbon
[1] AR6 provides two GWP values for methane depending on the source of the methane.

2.2.3 Federal Greenhouse Gas Regulations

2.2.3.1 Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in Massachusetts v. U.S. Environmental Protection Agency that CO_2 is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, HFC, PFC, and SF_6) threaten the public health and welfare of the American people (USEPA 2025d). This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA).

On June 30, 2022, the U.S. Supreme Court decision published in West Virginia v. U.S. Environmental Protection Agency overturned the USEPA's Clean Power Plan rule, which cited Section 111(d) of the CAA for authority to set limits on CO_2 emissions from existing coal- and natural-gas-fired power plants. The June 30, 2022 decision does not overturn the April 2, 2007 decision; however, it may limit the USEPA's authority to develop rules limiting GHG emissions without clear congressional authorization.

2.2.3.2 Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and the NHTSA worked together on developing a national program of regulations to reduce GHG emissions and improve fuel economy of light-duty vehicles. The USEPA established the first-ever national GHG emissions standards under the CAA, and the NHTSA established Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. Starting in 2010, the USEPA and NHTSA have announced a series of joint Final Rulemakings that established standards for passenger cars and light trucks commencing with 2012 model year vehicles. The latest rulemaking, announced on June 7, 2024, establishes standards that would require an industry-wide fleet average of approximately 50.4 miles per gallon in model year 2031 for passenger cars and light trucks (National Highway Traffic Safety Administration 2024).

2.2.4 California Greenhouse Gas Regulations

2.2.4.1 California Building Energy Efficiency Standards

CCR Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for space or water heating) results in GHG emissions.

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2022 Title 24 standards became effective on January 1, 2023. The 2022 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. New for the 2022 Title 24 standards are nonresidential on-site photovoltaic (solar panels) electricity generation requirements (California Energy Commission [CEC] 2022). The 2025 Title 24 standards become effective on January 1, 2026. For nonresidential buildings, the 2025 update to the Building Energy Efficiency Standards encourages expanded use of heat pumps, establishes electric-ready requirements for commercial kitchens, and updates photovoltaic and battery energy storage standards for multifamily and nonresidential buildings (CEC 2025).

The standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards—the energy budgets—that vary by climate zone (of which there are 16 in California) and building type; thus, the standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that are basically a recipe or a checklist compliance approach.

2.2.4.2 California Green Building Standards Code

The California Green Building Standards Code (CALGreen; CCR Title 24, Part 11) is a code with mandatory requirements for all nonresidential buildings (including industrial buildings) and residential buildings for which no other state agency has the authority to adopt green building standards. The 2022 CALGreen standards for new construction of, and additions and alterations to, residential and nonresidential buildings became effective on January 1, 2023 (California Building Standards Commission [CBSC] 2022). The 2025 CALGreen standards will become effective on January 1, 2026. At the time of this analysis, the 2025 CALGreen standards had not been published.

CALGreen is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction. CALGreen contains requirements for storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency. CALGreen contains two levels of voluntary measures (Tier 1 and Tier 2), which

go beyond minimum State code requirements. Categories of Tier 1 and Tier 2 measures include: EV designated parking; EV charging infrastructure; cool roofs; efficient outdoor lighting; dock door seals; potable water use reductions; recycled building material content; and resilient flooring.

2.2.4.3 Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

Signed by Governor Davis on July 22, 2002, AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2025d).

2.2.4.4 Executive Order S-3-05

On June 1, 2005, Executive Order (EO) S-3-05, issued by Governor Schwarzenegger, proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

2.2.4.5 Assembly Bill 32 – Global Warming Solution Act of 2006

Approved by Governor Brown on September 27, 2006, AB 32 (the California Global Warming Solutions Act of 2006) requires CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed by AB 32 to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

2.2.4.6 Executive Order S-01-07

EO S-01-07, issued by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether an LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS statewide.

2.2.4.7 Senate Bill 375

Approved on September 30, 2008, Senate Bill (SB) 375 (the Sustainable Communities and Climate Protection Act of 2008) supports the State's climate action goals to reduce GHG emissions through coordinated transportation and land use planning with the goal of more sustainable communities.

SB 375 requires CARB to set regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established these targets for 2020 and 2035 for each region covered by one of the State's Metropolitan Planning Organizations (MPOs). CARB periodically reviews and updates the targets, as needed.

Each of California's MPOs must prepare a Sustainable Communities Strategy (SCS) as an integral part of its regional transportation plan (RTP). The SCS contains land use, housing, and transportation strategies that, if implemented, would allow the region to meet its GHG emission reduction targets. Once adopted by the MPO, the RTP/SCS guides the transportation policies and investments for the region. CARB must review the adopted SCS to confirm and accept the MPOs' determination that the SCS, if implemented, would meet the regional GHG targets. If the combination of measures in the SCS would not meet the regional targets, the MPO must prepare a separate alternative planning strategy (APS) to meet the targets. The APS is not a part of the RTP. Qualified projects consistent with an approved SCS or APS categorized as "transit priority projects" would receive incentives to streamline CEQA processing.

2.2.4.8 Assembly Bill 341

Signed by Governor Brown on October 6, 2011, AB 341 increases the solid waste diversion target to 75 percent statewide. AB 341 requires all businesses and public entities that generate 4 cubic yards (CY) or more of waste per week to have a recycling program in place.

2.2.4.9 Executive Order B-30-15

On April 29, 2015, Governor Brown issued EO B-30-15 establishing a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28-nation European Union. California exceeded the target of reducing GHG emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050.

2.2.4.10 Senate Bill 350

Approved by Governor Brown on October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard eligible resources, including solar, wind, biomass, and geothermal. In addition, large utilities are required to develop and submit Integrated Resource Plans to detail how each entity will meet their customers resource needs, reduce GHG emissions, and increase the use of clean energy.

2.2.4.11 Senate Bill 32

Signed by Governor Brown on September 8, 2016, SB 32 (Amendments to the California Global Warming Solutions Action of 2006) extends California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emissions reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EO B-30-15 of 80 percent below 1990 emissions levels by 2050.

2.2.4.12 Assembly Bill 197

A condition of approval for SB 32 was the passage of AB 197 (signed by Governor Brown on September 8, 2016) which requires CARB to consider the social costs of GHG emissions and prioritize direct reductions in GHG emissions at mobile sources and large stationary sources. AB 197 also gives the California legislature more oversight over CARB through the addition of two legislatively appointed members to the CARB Board and the establishment of a legislative committee to make recommendations about CARB programs to the legislature.

2.2.4.13 Senate Bill 100

Approved by Governor Brown on September 10, 2018, SB 100 extends the renewable electricity procurement goals and requirements of SB 350. SB 100 requires that all retail sales of electricity to California end-use customers be procured from 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

2.2.4.14 Executive Order N-79-20

EO N-79-20, Issued by Governor Newsom on September 23, 2020, establishes three goals for the implementation of zero emissions vehicles in California: first, 100 percent of in-state sales of new passenger cars and trucks will be zero-emissions by 2035; second, 100 percent of medium- and heavy-duty vehicles in the state will be zero-emissions vehicles by 2045 for all operations where feasible, and by 2035 for drayage trucks; and third, 100 percent of off-road vehicles and equipment will be zero emissions by 2035 where feasible.

2.2.4.15 Assembly Bill 1279

Approved by Governor Newsom on September 16, 2022, AB 1279 (the California Climate Crisis Act) declares the policy of the state to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels. AB 1279 anticipates achieving these policies through direct GHG emissions reductions, removal of CO_2 from the atmosphere (carbon capture), and an almost complete transition away from fossil fuels.

2.2.4.16 Senate Bill 905

Approved by Governor Newsom on September 16, 2022, SB 905, Carbon Sequestration: Carbon Capture, Removal, Utilization, and Storage Program, requires CARB to establish a Carbon Capture, Removal, Utilization, and Storage Program to evaluate the efficacy, safety, and viability of carbon capture,

utilization, or storage technologies and CO_2 removal technologies and facilitate the capture and sequestration of CO_2 from those technologies, where appropriate. SB 905 is an integral part of achieving the state policies mandated in AB 1279.

2.2.4.17 California Air Resources Board: Scoping Plan

The Scoping Plan is a strategy CARB develops and updates at least once every five years, as required by AB 32. It lays out the transformations needed across California's society and economy to reduce emissions and reach climate targets. The current 2022 Scoping Plan is the third update to the original plan that was adopted in 2008. The initial 2008 Scoping Plan laid out a path to achieve the AB 32 mandate of returning to 1990 levels of GHG emissions by 2020, a reduction of approximately 15 percent below business as usual. The 2008 Scoping Plan included a mix of incentives, regulations, and carbon pricing, laying out the portfolio approach to addressing climate change and clearly making the case for using multiple tools to meet California's GHG emission targets. The 2013 Scoping Plan assessed progress toward achieving the 2020 mandate and made the case for addressing short-lived climate pollutants (SLCPs). The 2017 Scoping Plan also assessed progress toward achieving the 2020 limit and provided a technologically feasible and cost-effective path to achieving the SB 32 mandate of reducing GHGs by at least 40 percent below 1990 levels by 2030. On December 15, 2022, CARB approved the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan; CARB 2022b). The 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by Assembly Bill 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels; further reductions in SLCPs; support for sustainable development; increased action on natural and working lands to reduce emissions and sequester carbon; and the capture and storage of carbon (CARB 2022a).

2.2.5 Local Regulations

2.2.5.1 Southern California Association of Governments

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG coordinates with various air quality and transportation stakeholders in Southern California to ensure compliance with the federal and state air quality requirements. Pursuant to California Health and Safety Code Section 40460, SCAG has the responsibility of preparing and approving the portions of the AQMP relating to the regional demographic projections and integrated regional land use, housing, employment, and transportation programs, measures, and strategies. SCAG is required by law to ensure that transportation activities "conform" to, and are supportive of, the goals of regional and state air quality plans to attain the NAAQS. The RTP/SCS includes transportation programs, measures, and strategies generally designed to reduce vehicle miles traveled (VMT), which are contained in the AQMP. The SCAQMD combines its portion of the AQMP with those prepared by SCAG. In April 2024, SCAG's Regional Council adopted the 2024 RTP/SCS, *Connect SoCal 2024* (SCAG 2024).

2.2.5.2 County of Riverside

As part of the General Plan Air Quality Element, the County of Riverside adopted a Climate Action Plan (CAP) in 2015. The CAP "establishes goals and policies that incorporate environmental responsibility into

its daily management of residential, commercial and industrial growth, education, energy and water use, air quality, transportation, waste, education, economic development and open space and natural habitats to further their commitment." The CAP identified an emissions reduction target for 2020.

The Riverside County 2019 CAP Update was approved on December 17, 2019. The Riverside County 2019 CAP Update refines the Riverside County's efforts to meet GHG reduction strategies, specifically for the years 2035 and 2050. The Riverside County 2019 CAP Update builds upon the GHG reduction strategies in the 2015 CAP. The Riverside County CAP Update addresses cumulative GHG emissions, presents reduction measures that achieve reduction targets, and provides an implementation plan to implement the reduction measures (Riverside County 2019).

3.0 EXISTING CONDITIONS

3.1 CLIMATE AND METEOROLOGY

The Project site is in the SCAB, which consists of all or part of four counties: Los Angeles, San Bernardino, Riverside, and Orange. The distinctive climate of the SCAB is determined by its terrain and geographic location. The SCAB is a coastal plain with connecting broad valleys and low hills. It is bound by the Pacific Ocean to the southwest and high mountains around the rest of its perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light, average wind speeds.

The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds. Winds in the Project area are usually driven by the dominant land/ sea breeze circulation system. Regional wind patterns are dominated by daytime onshore sea breezes. At night, the wind generally slows and reverses direction traveling toward the sea. Local canyons can also alter wind direction, with wind tending to flow parallel to the canyons. The vertical dispersion of air pollutants in the SCAB is hampered by the presence of persistent temperature inversions. High pressure systems, such as the semi-permanent high-pressure zone in which the SCAB is located, are characterized by an upper layer of dry air that warms as it descends, restricting the mobility of cooler marine-influenced air near the ground surface, and resulting in the formation of subsidence inversions. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce conditions for the formation of photochemical smog.

The annual average maximum temperature as measured at the Hemet climatic station is 81.7 degrees Fahrenheit (°F). The highest monthly average maximum temperature (98.9°F) occurs in August, and the lowest monthly average minimum temperature (37.3°F) occurs in January. The average annual precipitation is approximately 11 inches (Western Regional Climate Center [WRCC] 2016).

3.2 EXISTING AIR QUALITY

3.2.1 Criteria Pollutants

3.2.1.1 Attainment Designations

Attainment designations are discussed in Section 2.1 and Table 4. The SCAB is a federal and state nonattainment area for ozone and $PM_{2.5}$ and a state nonattainment area for PM_{10}.

3.2.1.2 Monitored Air Quality

The SCAQMD maintains monitoring stations to measure ambient concentrations of pollutants in the SCAB. The nearest monitoring station to the Project is the Winchester – 33700 Borel Road monitoring station, located approximately 1,200 feet south of the Project alignment. This station monitors ozone. Data from the Lake Elsinore – W. Flint Street monitoring station, located approximately 12.6 miles west of the Project was used for PM_{10} and NO_2. None of the monitoring stations in the Project vicinity collected $PM_{2.5}$ data. Table 6, *Air Quality Monitoring Data*, presents a summary of the ambient pollutant concentrations monitored at the Winchester – 33700 Borel Road and Lake Elsinore – W. Flint Street monitoring stations during the years of 2022 through 2024 for which the SCAQMD has reported data. As shown in Table 6, the 1-hour ozone standard was exceeded on one day in 2024; the 8-hour ozone standard was exceeded on multiple days in 2022 through 2024; the 24-hour PM_{10} standard was exceeded on one day in 2023; and the annual average PM_{10} standard was exceeded in all years from 2022 through 2024 (CARB 2026a).

Table 6
AIR QUALITY MONITORING DATA

Pollutant Standard	2022	2023	2024
Ozone (O_3) – Winchester Station			
Maximum concentration 1-hour period (ppm)	0.087	0.088	0.100
Maximum concentration 8-hour period (ppm)	0.079	0.082	0.077
Days above 1-hour state standard (>0.09 ppm)	0	0	1
Days above 8-hour state/federal standard (>0.070 ppm)	4	3	6
Coarse Particulate Matter (PM_{10}) – Lake Elsinore Station			
Maximum 24-hour concentration (µg/m^3)	91.8	187.0	81.6
Measured Days above 24-hr state standard (>50 µg/m^3)	*	*	*
Measured Days above 24-hr federal standard (>150 µg/m^3)	0	1	0
Annual average (µg/m^3)	20.3	21.8	26.7
Exceed state annual standard (20 µg/m^3)	Yes	Yes	Yes
Fine Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration (µg/m^3)	*	*	*
Measured Days above 24-hour federal standard (>35 µg/m^3)	*	*	*
Annual average (µg/m^3)	*	*	*
Exceed state and federal annual standard (12 µg/m^3)	*	*	*
Nitrogen Dioxide (NO_2) – Lake Elsinore Station			
Maximum 1-hour concentration (ppm)	0.037	0.042	0.045
Days above state 1-hour standard (0.18 ppm)	0	0	0
Days above federal 1-hour standard (0.100 ppm)	0	0	0
Annual average (ppm)	0.007	0.006	0.007
Exceed annual federal standard (0.053 ppm)	No	No	No
Exceed annual state standard (0.030 ppm)	No	No	No

Source: CARB 2026a
ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter; * = insufficient data available

3.2.1.3 Toxic Air Contaminants

The SCAQMD has released an updated SCAB-wide air toxics study (MATES V). The MATES V Study is aimed at estimating the cancer risk from toxic air emissions throughout the SCAB by conducting a comprehensive monitoring program, an updated emissions inventory of TACs, and a modeling effort to

fully characterize health risks for those living in the SCAB. The MATES-V Study concluded that the average carcinogenic risk from air pollution in the Air Basin is approximately 455 in 1 million over a 70-year duration, Mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) represent the greatest contributors. Approximately 50 percent of the risk is attributed to diesel particulate emissions, approximately 25 percent to other toxics associated with mobile sources, and the remaining 25 percent of all carcinogenic risk is attributed to other sources. Based on the MATES V model, the Project alignment and proposed BPS site is within an area with a calculated cancer risk of approximately 262 cancers in 1 million (SCAQMD 2026).

3.3 EXISTING GHG EMISSIONS

3.3.1 Worldwide and National Greenhouse Gas Inventory

In 2022, total GHG emissions worldwide were estimated at 50,115 million metric tons (MMT) of CO_2e emissions (Climate Watch 2025). By country, the U.S. contributed the second largest portion (11.2 percent) of global GHG emissions, behind the largest contributor, China (with 25.4 percent of global emissions). The total U.S. GHG emissions were 5,600 MMT CO_2e in 2020 (Climate Watch 2025). On a national level, approximately 90.4 percent of GHG emissions were associated with energy, including transportation energy (Climate Watch 2025).

3.3.2 California GHG Inventory

CARB performed statewide inventories for the years 1990 to 2022, as shown in Table 7, *California Greenhouse Gas Emissions by Sector*. The inventory is divided into five broad sectors of economic activity: agriculture, commercial and residential, electricity generation, industrial, and transportation. Emissions are quantified in MMT CO_2e.

Table 7
CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	Emissions (MMT CO_2e)			
	1990	2000	2020	2023
Agriculture and Forestry	18.9 (4%)	32.3 (7%)	31.5 (9%)	29.2 (8%)
Commercial and Residential	44.1 (10%)	44.8 (10%)	42.0 (11%)	43.3 (12%)
Electricity Generation	110.5 (26%)	104.7 (23%)	59.5 (16%)	57.2 (16%)
High Global Warming Potential	-	6.6 (1%)	21.3 (6%)	21.4 (6%)
Industrial	105.3 (24%)	86.6 (19%)	71.1 (19%)	66.9 (19%)
Recycling and Waste	-	7.1 (2%)	8.4 (2%)	8.6 (2%)
Transportation	150.6 (35%)	176.5 (38%)	135.5 (37%)	133.7 (37%)
Unspecified Remaining	1.3 (<1%)	0.0 (0%)	0.0 (0%)	0.0 (0%)
Total	**430.7**	**458.6**	**369.3**	**360.4**

Source: CARB 2007 and CARB 2026b
MMT = million metric tons; CO_2e = carbon dioxide equivalent

As shown in Table 7, statewide GHG source emissions totaled 430.7 MMT CO_2e in 1990, 458.6 MMT CO_2e in 2000, 369.3 MMT CO_2e in 2020, and 360.4 MMT CO_2e in 2023. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions (CARB 2007 and CARB 2026b).

3.3.3 Riverside County GHG Inventory

The Riverside County 2019 CAP Update provides net 2017 Riverside County emissions of CO_2e as broken down by emissions category. Riverside County as a whole emitted 4,905,518 MT CO_2e in 2017. The largest portion of Riverside County's 2017 emissions were from transportation (36 percent), followed by agriculture (34 percent), and electricity and natural gas use in buildings (24 percent). Emissions by category are shown in Table 8, Riverside *County-wide GHG Emissions by Sector.*

Table 8
RIVERSIDE COUNTY-WIDE GHG EMISSIONS BY SECTOR

Emissions Category	MT CO_2e	Percentage of Total
On-road Transportation	1,766,784	36%
Agriculture	1,670,954	34%
Energy (Electricity and Natural Gas)	1,188,138	24%
Solid Waste	204,365	4%
Water and Wastewater	44,606	1%
Aviation	26,786	1%
Off-road Sources	3,883	<1%
TOTAL	**4,905,518**	**100%**

Source: Riverside County 2019
MT = metric tons; CO_2e = carbon dioxide equivalent

The Western Riverside Council of Governments (WRCOG) prepared an emissions inventory as part of their Subregional CAP. In 2010, Subregional CAP cities emitted approximately 5,834,400 metric tons of GHG emissions. The breakdown of emissions by sector is shown below in Table 9, *Western Riverside Council of Governments Greenhouse Gas Emissions by Sector*. With the exception of transportation, the sectors reported in the CAP inventory do not correspond directly to those reported in the statewide inventory.

Table 9
WESTERN RIVERSIDE COUNCIL OF GOVERNMENTS
GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	MT CO_2e	Percentage of Total
Transportation	3,317,387	57%
Commercial/Industrial Energy	1,226,479	21%
Residential Energy	1,167,843	20%
Solid Waste	112,161	2%
Wastewater	10,531	<1%
TOTAL	**5,834,400**	**100%**

Source: WRCOG 2014
MT = metric tons; CO_2e = carbon dioxide equivalent

Similar to the statewide emissions, transportation-related GHG emissions for the Subregional CAP cities were the greatest contributor, followed by energy-related GHG emissions.

3.3.4 Sensitive Receptors

Sensitive receptors are children, elderly, asthmatics, and others who are at a heightened risk of negative health outcomes due to exposure to air pollution. The locations where these sensitive receptors congregate are considered sensitive receptor locations. Sensitive Receptor locations may include residences, hospitals, schools, and day care centers, and such other locations as the air district board or California Air Resources Board may determine (California Health and Safety Code § 42705.5[a][5]).

Residences and other sensitive receptors are located at various places along the roadways where the pipelines are proposed. The exact location of the BPS is yet to be determined, but the closest residences are along the east side of Van Gaale Lane, which could be as close as 70 feet to the BPS.

4.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.1 METHODOLOGY

Criteria pollutant and GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1. CalEEMod is a computer model used to estimate air emissions resulting from land development projects throughout the state of California. CalEEMod was developed by the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air quality management and pollution control districts. The calculation methodology, source of emission factors used, and default data are described in the CalEEMod User's Guide, and Appendices C, D, and G (CAPCOA 2022).

CalEEMod is a computer model that estimates criteria air pollutant and greenhouse gas emissions from mobile (i.e., vehicular) sources, area sources (fireplaces, woodstoves, and landscape maintenance equipment), energy use (electricity and natural gas used in space heating, ventilation, and cooling; lighting; and plug-in appliances), water use and wastewater generation, and solid waste disposal. Emissions are estimated based on land use information input to the model by the user.

In the first module, the user defines the specific land uses that will occur at the project site. The user also selects the appropriate land use setting (urban or rural), operational year, location, climate zone, and utility provider. The input land uses, size features, and population are used throughout CalEEMod in determining default parameters and calculations in each of the subsequent modules. The land use information input consists of land use subtypes (such as the residential subtypes of single-family residential and multi-family medium-rise residential) and their unit or square footage quantities.

Subsequent modules include construction (including off-road vehicle emissions), mobile (on-road vehicle emissions), area sources (architectural coatings [painting], consumer products [cleansers, aerosols, solvents]), water and wastewater, and solid waste. Each module comprises multiple components, including an associated mitigation module to account for further reductions in the reported baseline calculations. Other inputs include trip generation rates, trip lengths, vehicle fleet mix (percentage autos, trucks, etc.), trip distribution (percent work to home, etc.), duration of construction phases, construction equipment usage, grading areas, season, and ambient temperature, as well as other parameters.

In various places, the user can input additional information and/or override the default assumptions to account for project- or location-specific parameters. For this assessment, the default parameters were

not changed unless otherwise noted. The CalEEMod output files are included in Appendix A, *Model Output*, to this report.

4.2 ASSUMPTIONS

4.2.1 Construction

As discussed in Section 1.2.1, the Project would be constructed in four phases.

4.2.1.1 Booster Pump Station Construction

Construction of the BPS would consist of clearing and grubbing of the site, grading, structural excavation, utility installation, asphalt paving, site improvements (e.g., curbs and gutters, sidewalks, perimeter wall), structure construction, and equipment installation. Construction laydown/storage for the BPS construction is anticipated to occur within the site that is either already owned by the District or would be acquired by the District to construct these facilities. Clearing and grubbing would result in an export of approximately 830 CY of vegetation from the BPS site. Approximately 2,400 CY of soil would be excavated and exported from the BPS site. The CalEEMod default haul distance of 20 miles was assumed.

4.2.1.2 Turnout

Construction of the proposed turnout would involve excavation for the vaults, installation of utilities, construction of the vaults, and installation of equipment. Approximately 1,600 CY of soil would be excavated and exported from the turnout site. The CalEEMod default haul distance of 20 miles was assumed.

4.2.1.3 Pipeline Construction

Installation of the proposed transmission pipelines would involve sliplining existing pipelines and constructing new pipelines. Construction methods for these two means of installation are discussed below. Soil excavated from pipeline construction pits and trenches would be stockpiled at designated locations on or near Project construction sites and used to backfill the pits and trenches at the conclusion of pipeline installation or sliplining.

Sliplining Existing Pipeline

The sliplining technique to install pipe is where a new pipe is placed inside of an existing pipe. The existing pipe acts as the “host” or path for the new pipe. This technique greatly reduces the amount of area that needs to be excavated when upgrading or installing new pipe. The existing pipe is accessed by excavating pits along the existing pipe alignment to allow for the insertion of the new pipe. The new pipe is installed in segments that are connected to each subsequent segment inside of the access pit once the pipe has successfully been inserted into the existing pipe. Once each segment has been installed, the access pit location is backfilled, re-compacted, and restored to the original condition.

Constructing New Pipeline

Construction of the segments of new pipeline would occur via the open cut method, except for portions that would require a specialized trenchless construction method. Open cut installation is accomplished

by excavating the ground surface to dig and secure a trench to the appropriate installation depth and then the pipe is placed in the trench. The trench is then backfilled, re-compacted, and restored to the original condition.

The transmission pipeline would range between 43 inches and 72 inches. An approximately 36-foot construction zone width within public streets would be needed for the 60-inch to 72-inch diameter pipelines, assuming:

- Trenching would be vertically shored, with a minimum 8-foot depth to top of pipe to reduce utility conflicts. Average trench depth would vary depending on each phase and corresponding pipeline diameter. Trench width would also vary by pipeline diameter, ranging from approximately 8 feet for 48-inch-diameter pipeline to 12 feet for 72-inch-diameter pipeline.

- Excavation and pipe laying equipment would be positioned ahead of or behind the pipe being placed.

- Trenching would be positioned on one side of the construction zone such that deliveries, hauling, and staging could occur on the other side.

- Stockpiling of excavated soils would occur at temporary off-site locations to be determined at time of construction.

Construction width would increase from 36 feet within public streets to up to 49 feet in open space and easement areas to accommodate sloped trench sides. Assumptions for construction in open space areas include:

- Trench sides would be sloped, with a minimum 5-foot depth to top of pipe. The lower depth of cover assumes minimal utilities interference in easement-controlled reaches.

- Excavation and pipe laying equipment would be positioned ahead of or behind the pipe being placed.

- Trenching would be positioned on one side of the construction zone such that deliveries, hauling, and staging could occur on the other side.

- Stockpiling of excavated soils would occur at temporary off-site locations.

Trenchless construction methods would be used as appropriate to avoid critical surface features, areas congested with utilities, designated highways and heavily traveled roads, and sensitive environmental areas and wetland habitats. Trenchless pipe installation is a technique that involves drilling or tunneling through the soil to install the pipe without having impacts to the surfaces above. Different types of augers or drills can be used to complete the tunnel where the new pipe can be installed. Typically, a launching pit and receiving pit are excavated using traditional backhoes or excavators on each side of the tunnel for access and pipe insertion into the tunnel. Launching pits are expected to be up to 50 feet long and 8 to 12 feet wide, and receiving pits are expected to be up to 20 feet long and 8 to 12 feet wide. The launching and receiving pit areas are then backfilled, re-compacted, and restored to their original condition.

Locations anticipated to require trenchless construction methods include the following:

- Station (mile post) 3.1 SR-79 and Thompson Road Crossing (Phase 4)
- Station (mile post) 3.3 French Valley Channel Crossing (Phase 4)
- Station (mile post) 6.2 Scott Road Crossing (Phase 4)
- Station (mile post) 8.6 SR-79 (Phase 4)
- Station (mile post) 10.7 Domenigoni Parkway Crossing (Phase 3)
- Station (mile post) 10.9 Salt Creek Channel Crossing (Phase 3)

The rate of construction progress would vary depending on many factors, including whether the alignment would be in a busy paved street, the number of crossing utilities, groundwater, and the ease of the earth material to be excavated (i.e., bedrock, boulders, cobbles, etc.). For this analysis, an average construction rate of 80 feet per day was assumed considering the mix of paved streets, open space, and dirt roads through which the alignment would be constructed.

During the temporary stockpile period, best management practices (BMPs) for dust control and erosion prevention would be implemented, such as covering the stockpile with erosion control blankets, installing fiber rolls, and/or applying soil binders in accordance with SCAQMD Rule 403.

Construction of the components associated with Phase 1 is anticipated to occur from July 2028 through October 2029 for the system to be tested and fully online by 2030. Sequencing and duration may vary depending on seasonal restrictions, environmental factors, and number of crews working simultaneously. Construction would likely occur during both daytime and nighttime hours, depending on the activity. Construction beyond Phase 1 is preliminary and only provided for a conservative analysis. The preliminary construction schedule and equipment list for each Project phase is provided in Table 10, *Anticipated Construction Schedule and Equipment*.

The quantity, duration, and the intensity of construction activity influence the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in the CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report.

CalEEMod has the capability to calculate reductions in construction emissions from the effects of dust control, diesel-engine classifications, and other selected emissions reduction measures. Emissions calculations assume application of water twice per day during grading in compliance with SCAQMD Rule 403, Fugitive Dust.

Table 10
ANTICIPATED CONSTRUCTION SCHEDULE AND EQUIPMENT

Project Component	Activity	Anticipated Equipment	Anticipated Construction Period Start	Anticipated Construction Period End
Phase 1				
Construct turnout	Excavation for vault structures	1 Excavator; 1 Backhoe	July 2028	July 2028
	Utility installation	1 Excavator; 1 Backhoe	August 2028	August 2028
	Structure construction	1 Crane; 1 Excavator; 1 Backhoe; 1 Forklift	September 2028	November 2028
	Equipment installation	1 Crane; 1 Excavator; 1 Forklift; 1 Welder; 1 Generator	December 2028	February 2029
Construct BPS	Clear and grub	2 Backhoe	July 2028	July 2028
	Grading	1 Dozer; 2 Grader; 1 Excavator; 2 Dump Truck	July 2028	August 2028
	Structural excavation	1 Excavator; 1 Backhoe	September 2028	September 2028
	Utility installation	1 Backhoe	October 2028	October 2028
	Asphalt paving	1 Roller; 1 Paver; 1 Paving Equipment	November 2028	November 2028
	Site improvements	1 Backhoe; 1 Roller; 1 Forklift	November 2028	November 2028
	Structure construction	1 Crane; 1 Backhoe; 1 Concrete Pump Truck; 2 Forklift	December 2028	February 2029
	Architectural Coating	1 Air Compressor	February 2029	February 2029
	Equipment installation	1 Crane; 1 Forklift; 1 Welder; 1 Generator	March 2029	October 2029
Reline existing SD Pipeline 1 or 2 from BPS to Fowler Drive	Excavate sliplining launching/receiving pits	1 Excavator; 1 Backhoe; 1 Dump Truck	July 2028	October 2029
	Slipline pipe	1 Excavator; 1 Generator; 1 Welder	July 2028	October 2029
	Backfill sliplining launching/receiving pits	1 Excavator; 1 Water Truck; 1 Generator; 1 Backhoe; 1 Dump Truck	July 2028	October 2029
	Resurfacing/ repaving	1 Roller; 1 Paver	July 2028	October 2029
Phase 2				
Reline existing SD Pipeline 1 or 2 from Fowler Drive to Holland Road	Excavate sliplining launching/receiving pits	1 Excavator; 1 Backhoe	July 2033	October 2034
	Slipline pipe	1 Excavator; 1 Generator; 1 Welder	July 2033	October 2034
	Backfill sliplining launching/receiving pits	1 Excavator; 1 Water Truck; 1 Generator; 1 Backhoe, 1 Dump Truck	July 2033	October 2034
	Resurfacing/ repaving	1 Roller; 1 Paver	July 2033	October 2034

Project Component	Activity	Anticipated Equipment	Anticipated Construction Period Start	Anticipated Construction Period End
Phase 3				
Install new 60-inch pipeline from Holland Road to Simpson Road	Trenching	1 Excavator; 1 Backhoe	July 2038	October 2039
	Trenched pipeline installation	1 Crane; 1 Excavator; 1 Backhoe; 1 Generator; 1 Welder	July 2038	October 2039
	Backfill	1 Excavator; 1 Water Truck; 1 Generator; 1 Backhoe; 1 Dump Truck	July 2038	October 2039
	Resurfacing/ repaving	1 Roller; 1 Paver	July 2038	October 2039
	Excavate trenchless launching/receiving pits	1 Excavator; 1 Backhoe	July 2038	July 2038
	Trenchless pipe installation	1 Crane; 1 Excavator; 1 Generator; 1 Welder; 1 Bore/drill rig; 1 Pump	August 2038	September 2038
	Backfill trenchless launching/receiving pits	1 Excavator; 1 Water Truck; 1 Generator; 1 Backhoe, 1 Dump Truck	October 2038	October 2038
	Resurfacing/ repaving	1 Roller; 1 Paver	November 2038	November 2038
Phase 4				
Install new 72-inch pipeline from Skinner WTP to turnout	Trenching	1 Excavator; 1 Backhoe	July 2042	October 2043
	Trenched pipeline installation	1 Crane; 1 Excavator; 1 Backhoe; 1 Generator; 1 Welder	July 2042	October 2043
	Backfill	1 Excavator; 1 Water Truck; 1 Generator; 1 Backhoe; 1 Dump Truck	July 2042	October 2043
	Resurfacing/repaving	1 Roller; 1 Paver	July 2042	October 2043
Install new 60-inch parallel pipe from BPS to Fowler Drive	Trenching	1 Excavator; 1 Backhoe	July 2042	October 2043
	Trenched pipeline installation	1 Crane; 1 Excavator; 1 Backhoe; 1 Generator; 1 Welder	July 2042	October 2043
	Backfill	1 Excavator; 1 Water Truck; 1 Generator; 1 Backhoe; 1 Dump Truck	July 2042	October 2043
	Resurfacing/repaving	1 Roller; 1 Paver	July 2042	October 2043
	Excavate trenchless launching/receiving pits	1 Excavator; 1 Backhoe	July 2042	July 2042
	Trenchless pipe installation	1 Crane; 1 Excavator; 1 Generator; 1 Welder; 1 Bore/drill rig; 1 Pump	August 2042	September 2042

Project Component	Activity	Anticipated Equipment	Anticipated Construction Period Start	Anticipated Construction Period End
	Backfill trenchless launching/receiving pits	1 Excavator; 1 Water Truck; 1 Generator; 1 Backhoe; 1 Dump Truck	October 2042	October 2042
	Resurfacing/repaving	1 Roller; 1 Paver	November 2042	November 2042
Install new 48-inch parallel pipe from Fowler Drive to Holland Road	Trenching	1 Excavator; 1 Backhoe	July 2042	October 2043
	Trenched pipeline installation	1 Crane; 1 Excavator; 1 Backhoe; 1 Generator; 1 Welder	July 2042	October 2043
	Backfill	1 Excavator; 1 Water Truck; 1 Generator; 1 Backhoe; 1 Dump Truck	July 2042	October 2043
	Resurfacing/repaving	1 Roller; 1 Paver	July 2042	October 2043
	Excavate trenchless launching/receiving pits	1 Excavator; 1 Backhoe	July 2042	July 2042
	Trenchless pipe installation	1 Crane; 1 Excavator; 1 Generator; 1 Welder; 1 Bore/drill rig; 1 Pump	August 2042	September 2042
	Backfill trenchless launching/receiving pits	1 Excavator; 1 Water Truck; 1 Generator; 1 Backhoe; 1 Dump Truck	October 2042	October 2042
	Resurfacing/repaving	1 Roller; 1 Paver	November 2042	November 2042

4.2.2 Operation

Operational emissions were estimated using CalEEMod and off-model calculations for emissions from natural gas ICE pumps. Because CalEEMod does not contain data to allow analysis beyond 2050, emissions from the Project at full buildout of the Perris Valley area in 2080 were analyzed in CalEEMod for 2050. Operational sources of emissions include mobile (transportation), area, energy, water/wastewater, and solid waste.

4.2.2.1 Mobile (Transportation) Sources

Operational emissions from mobile source emissions are associated with Project-related VMT (calculated in the model from trip generation and trip lengths). Vehicular traffic generated during operation of the proposed Project would be limited to approximately 10 daily trips from District personnel and deliveries.

4.2.2.2 Area Sources

Area sources include emissions from landscaping equipment, the use of consumer products, and the reapplication of architectural coatings for maintenance. Emissions associated with area sources were estimated using the CalEEMod default values for a light industrial building.

4.2.2.3 Natural Gas Internal Combustion Engine Pumps

As discussed in Section 1.2.1, the impact analysis in this report conservatively assumes the Project BPS would use the natural gas ICE pump option because that option would have the potential for the highest increased emissions. Two mitigation options for the BPS pumps were analyzed: a hybrid natural gas ICE/electric pumps scenario (with the 2030 pumps assumed to be natural gas ICE and the additional pumps added in 2045 and 2080 assumed to be electric; and an all-electric pump scenario. The size of the modeled BPS pumps for each option is shown in Table 11, *BPS Pump Options*.

Table 11
BPS PUMP OPTIONS

Pipeline Transmission Capacity	Natural Gas Pumps	Mitigation Measure AQ-1 Option 2 (Natural Gas ICE Pumps and Electric Pumps)	Mitigation Measure AQ-1 Option 1 (All-Electric Pumps)
Project Operation at 40 cfs	Five 10-cfs pumps (four duty, one standby), each with 800-hp natural gas ICE	Five 10-cfs pumps (four duty, one standby), each with 800-hp natural gas ICE	Five 10-cfs pumps (four duty, one standby), each with 600-hp electric motor
Project Operation at 80 cfs	Seven 10-cfs pumps (six duty, one standby), each with 800-hp natural gas ICE; and one 20-cfs pump with 1,500-hp natural gas ICE.	Five 10-cfs pumps (four duty, one standby), each with 800-hp natural gas ICE; two 10-cfs pumps each with 600-hp electric motor; and one 20-cfs pump with 1,250-hp motor.	Seven 10-cfs pumps (six duty, one standby), each with 600-hp electric motor; and one 20-cfs pump with 1,250-hp motor.
Project operation at 140 cfs	Seven 10-cfs pumps (six duty, one standby), each with 800-hp natural gas ICE; and five 20-cfs pumps (four duty, one standby), each with 1,500-hp natural gas ICE.	Five 10-cfs pumps (four duty, one standby), each with 800-hp natural gas ICE; two 10-cfs pumps each with 600-hp electric motor; and five 20-cfs pumps (four duty, one standby) each with 1,250-hp motor.	Seven 10-cfs pumps (six duty, one standby), each with 600-hp electric motor; and five 20-cfs pumps (four duty, one standby), each with 1,250-hp motor.

cfs = cubic feet per second; hp = horsepower; ICE = internal combustion engine

Emissions from natural gas ICE pumps were calculated using emissions factors from the USEPA AP-42: Compilation of Air Emissions Factors from Stationary Sources, Chapter 3.2, Natural Gas-Fired Reciprocating Engines, Table 3.2-3 Uncontrolled Emission Factors for 4-Stroke Rich-Burn Engines (USEPA 2024). Project natural gas ICE pumps would be subject to SCAQMD Rule 1110.2 which limits the concentrations (in parts per million by volume) of VOC, NO_X, and CO in the engine exhaust. It is anticipated that the Project natural gas ICE pumps would have uncontrolled emissions of NO_X exceeding the Rule 1110.2 concentration limits. Therefore, NO_X emissions from Project natural gas ICE pumps were calculated using the default emissions factors from CalEEMod for a large horsepower (500 to 9,999 horsepower) natural gas ICE generator, which assumes compliance with SCAQMD Rule 1110.2. See the

CalEEMod 2022 User's Guide Appendix C for details about natural gas combustion emissions calculations (CalEEMod 2022). All duty pumps were assumed to operate at 100 percent of their rated power and operate for 80 percent of the year (7,008 hours per year per pump). A printout of the natural gas ICE pump emission calculations sheet is included in Appendix A.

4.2.2.4 Energy Sources

The Project BPS site would use electricity for lighting, building heating, ventilation, and air conditioning (HVAC) systems, and water conveyance equipment. Building lighting and HVAC energy use was modeled using CalEEMod defaults for a light industrial building.

GHG emissions resulting from operation of electric BPS pumps assumed in the two mitigation options were calculated in CalEEMod. All electric pumps were assumed to operate at 100 percent of their rated power and operate for 80 percent of the year (7,008 hours per year per pump). The electricity for electric pumps was calculated by converting the total horsepower-hours (hp-hr) per year to kilowatt-hours (kWh) per year (1 hp-hr = 0.7457 kWh) and the calculated pump electricity use was entered in the CalEEMod energy section building electricity use not subject to Title 24.

4.2.2.5 Water and Wastewater Sources

Water-related GHG emissions are from the conveyance and treatment of water and wastewater. Project water use was modeled using CalEEMod defaults for a light industrial building.

4.2.2.6 Solid Waste Sources

The disposal of solid waste produces GHG emissions from anaerobic decomposition in landfills, incineration, and transportation of waste. CalEEMod determines the GHG emissions associated with disposal of solid waste into landfills. Portions of these emissions are biogenic. CalEEMod methods for quantifying GHG emissions from solid waste are based on the IPCC method using the degradable organic content of waste. Solid waste was modeled using CalEEMod defaults for a light industrial building.

4.2.2.7 Refrigerants

CalEEMod calculates GHG emissions associated with refrigerants (typically HFCs or blends of gases containing HFCs) which are emitted through leakage or maintenance from Project refrigeration systems, freezers, and air conditioning systems. Refrigerant emissions were calculated using CalEEMod defaults for a light industrial building.

4.2.2.8 Emergency Generators

Project diesel-powered emergency back generators were modeled in the Stationary Sources section of CalEEMod. For the mitigation options with electric BPS pumps, generators were assumed to operate all electric pumps at their full rated capacity. The number and sizes of emergency generators for each option is shown in Table 12, *Emergency Generator Options*. All generators were assumed to be operated up to 30 minutes in a day and up to 50 total hours per year for testing and maintenance.

Table 12
EMERGENCY GENERATOR OPTIONS

Pipeline Transmission Capacity	Natural Gas Pumps	Mitigation Measure AQ-1 (Natural Gas ICE Pumps and Electric Pumps)	Mitigation Measure AQ-2 (All-Electric Pumps)
Project Operation at 40 cfs	One, 1-MW generator with 1,200-hp diesel engine	One, 1-MW generator with 1,200-hp diesel engine	One 1.8-MW generator with 2,200-hp diesel engine
Project Operation at 80 cfs	One, 1-MW generator with 1,200-hp diesel engine	One, 1-MW generator with 1,200-hp diesel engine; one 1.8-MW generator with 2,200-hp diesel engine	Two 1.8-MW generators with 2,200-hp diesel engine
Project operation at 140 cfs	One, 1-MW generator with 1,200-hp diesel engine	One, 1-MW generator with 1,200-hp diesel engine; one 1.8-MW generator with 2,200-hp diesel engine; one 3-MW generator with 3,000-hp diesel engine	Two 1.8-MW generators with 2,200-hp diesel engine; one 3-MW generator with 3,000-hp diesel engine

MW = megawatt; hp = horsepower

4.2.3 Localized Significance Threshold Methodology

As part of the SCAQMD's environmental justice program, more attention has been focused on localized air quality effects. In addition to the California Environmental Quality Act (CEQA) significance thresholds for mass daily emissions and regional conditions, the SCAQMD has established thresholds for ambient air quality to address localized impacts. Also, while regional impact analysis is based on attaining or maintaining regional emissions standards, localized impact analysis compares the concentration of a pollutant at a receptor site to a health-based standard.

SCAQMD staff then developed localized significance threshold (LST) methodology and mass rate look-up tables by source receptor area (SRA) that can be used by public agencies to determine whether a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will 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 SRA (SCAQMD 2009). The LST methodology translates the concentration standards into emissions thresholds that are a function of project site area, source to receptor distance, and the location within the SCAB. The LST methodology is recommended to be limited to projects of 5 acres or less and to avoid the need for complex dispersion modeling. If a project exceeds the LST look-up values, then the SCAQMD recommends that project-specific localized air quality modeling be performed.

The Project would involve multiple components that would be constructed at different locations, thus affecting different receptors, and at different times. Because the BPS and turnout would be constructed concurrently during Phase 1 and would be in the same general area, the combined construction emissions for the BPS and turnout were compared to the LSTs. Construction of the pump station and turnout would occur at set locations and would have the potential to affect given receptors for the entirety of their construction, whereas construction of the pipelines would progress along linear alignments (at an average of approximately 80 feet per day) and would not affect given receptors for the entirety of their construction.

For construction emissions, the LST look-up values are determined using the maximum area disturbed per day rather than the size of the project site. For Project construction activities which would include grading equipment (dozers, graders, or scrapers), the maximum area disturbed per day was determined for the construction phase of each Project component resulting in the maximum pollutant emissions in accordance with the methodology in the SCAQMD's *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds* (SCAQMD 2025e), where a grader or a dozer is assumed to disturb 0.5 acre per day and a scraper is assumed to disturb one acre per day. The only use of grading equipment would occur during grading for the BPS which would require one dozer and two graders, resulting in 1.5 acres disturbed per day. All other BPS and turnout construction activities which would not involve grading equipment were assumed to disturb no more than one acre per day. All Project pipeline construction activities were assumed to disturb no more than 1 acre per day. Only the activities within each construction phase with the highest emissions, and highest operational emissions (Project operations at 140 cfs pipeline transmissions capacity) were evaluated in the LST analysis.

The disturbed areas and distances to the nearest sensitive receptor for each Project construction activity are shown in Table 13, *Project Construction Localized Significance Threshold Factors.* Project construction and operation of the BPS and turnout would be located with SRA 26, Temecula Valley. Pipeline construction would occur within SRA 26, Temecula Valley, and SRA 24, Perris Valley. Because the LSTs for SRA 24 are lower than the LSTs for SRA 26, to be conservative, all pipeline construction emissions were compared to the SRA 24 LSTs.

Table 13
PROJECT CONSTRUCTION LOCALIZED SIGNIFICANCE THRESHOLD FACTORS

Activities	Maximum Area Disturbed Per Day	Nearest Receptor Type	Distance to Nearest Receptor
Phase 1 Turnout Utility Installation, BPS Grading	1.5 acres	Single-family residences	25 meters
Phase 1 Pipe Sliplining	1 acre	Single-family residences	25 meters
Phase 2 Pipe Sliplining	1 acre	Single-family residences	25 meters
Phase 3 Trenching, Trenchless Pipeline Installation	1 acre	Single-family residences	25 meters
Phase 4 Trenching, Trenchless Pipeline Installation	1 acre	Single-family residences	25 meters

4.3 SIGNIFICANCE CRITERIA

4.3.1 Air Quality

Thresholds used to evaluate potential air quality and odor impacts are based on applicable criteria in the CEQA Guidelines Appendix G. A significant air quality and/or odor impact could occur if the implementation of the proposed Project would:

1. Conflict with or obstruct implementation of the SCAQMD Air Quality Management Plan, or applicable portions of the SIP; or

2. Result in a cumulatively considerable net increase of any criteria pollutant for which the SCAB is non-attainment under an applicable NAAQS or CAAQS; or

3. Expose sensitive receptors to substantial pollutant concentrations; or

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

Appendix G of the State CEQA Guidelines states that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The SCAQMD has established significance thresholds to assess the regional and localized impacts of Project-related air pollutant emissions. The significance thresholds are updated, as needed, to appropriately represent the most current technical information and attainment status in the SCAB. Table 14, *SCAQMD Thresholds of Significance*, presents the most current significance thresholds, including regional daily thresholds for short-term construction and long-term operational emissions; maximum incremental cancer risk and hazard indices for TACs; and maximum ambient concentrations for exposure of sensitive receptors to localized pollutants. A project with daily emission rates, risk values, or concentrations below these thresholds is generally considered to have a less than significant effect on air quality.

Table 14
SCAQMD THRESHOLDS OF SIGNIFICANCE

Pollutant	Construction	Operation
Mass Daily Thresholds (pounds per day)		
VOC	75	55
NO_X	100	55
CO	550	550
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
Lead	3	3
Toxic Air Contaminants		
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Ambient Air Quality for Criteria Pollutants		
NO_2	1-hour average ≥ 0.18 ppm Annual average ≥ 0.03 ppm	
CO	1-hour average ≥ 20.0 ppm (state) 8-hour average ≥ 9.0 ppm (state/federal)	
PM_{10}	24-hour average ≥ 10.4 µg/m^3 (construction) 24-hour average ≥ 2.5 µg/m^3 (operation) Annual average ≥ 1.0 µg/m^3	
$PM_{2.5}$	24-hour average ≥ 10.4 µg/m^3 (construction) 24-hour average ≥ 2.5 µg/m^3 (operation)	

Pollutant	Construction	Operation
SO_2	1-hour average ≥ 0.075 ppm 24-hour average ≥ 0.04 ppm	

Source: SCAQMD 2019b
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; SO_X = sulfur oxides; TACs = toxic air contaminants; GHG = greenhouse gas; MT/yr = metric tons per year; CO_2e = carbon dioxide equivalent; NO_2 = nitrogen dioxide; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter

4.3.2 Greenhouse Gases

Given the relatively small levels of emissions generated by a typical development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. Therefore, the potential for a significant GHG emissions impact is limited to cumulative impacts.

According to Appendix G of the CEQA Guidelines, a project would have a significant environmental impact if it would:

(1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or

(2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The determination of significance is governed by CEQA Guidelines 15064.4, entitled "Determining the Significance of Impacts from Greenhouse Gas Emissions." CEQA Guidelines Section 15064.4(a) states, "[t]he determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to … [use a quantitative model or qualitative model]" (emphasis added). In turn, CEQA Guidelines Section 15064.4(b) clarifies that a lead agency should consider "Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project." Therefore, consistent with CEQA Guidelines Section 15064.4, the GHG emissions analysis for the Project appropriately relies upon a threshold based on the exercise of careful judgement and is appropriate in the context of this Project.

The proposed Project is best categorized as an industrial project and is within the jurisdiction of the SCAQMD; therefore, for this analysis, the most appropriate screening threshold for determining GHG emissions impacts is the SCAQMD proposed Tier 3 screening threshold for industrial projects of 10,000 MT CO_2e (SCAQMD 2010).

4.3.3 General Conformity

The District may seek financing from the State Water Resources Control Board in which case the Project would require compliance not only with the CEQA, but also with the federal CAA. As such, the air quality analysis has been conducted to satisfy General Conformity requirements.

The USEPA General Conformity Rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of pollutants (or their precursors) exceed specified thresholds. The emissions thresholds that trigger requirements for a conformity analysis are called *de minimis* levels. *De minimis* levels (in tons per year [tpy]) vary by pollutant and also depend on the severity of the attainment status for the air quality management area in question.

A conformity applicability analysis is the first step of a conformity evaluation and assesses if a federal action must be supported by a conformity determination. This is typically done by quantifying applicable direct and indirect emissions that are projected to result due to implementation of the federal action. Indirect emissions are those emissions caused by the federal action and originating in the region of interest, but which can occur at a later time or in a different location from the action itself and are reasonably foreseeable. Reasonably foreseeable emissions are projected for future direct and indirect emissions that are identified at the time the conformity evaluation is performed. If the results of the applicability analysis indicate that the total emissions would not exceed the *de minimis* emissions levels, then the conformity evaluation process is completed.

The SCAB is nonattainment for ozone and $PM_{2.5}$ and is a maintenance area for CO, NO_2, and PM_{10}. *De minimis* levels are presented in Table 15, *General Conformity De Minimis Levels for SCAB*.

Table 15
GENERAL CONFORMITY DE MINIMIS LEVELS FOR SCAB

Pollutant	Area Type	Tons per Year
Ozone (VOC)	Extreme nonattainment	10
Ozone (NO_X)	Extreme nonattainment	10
$PM_{2.5}$	Serious nonattainment	70
PM_{10}	Attainment (Maintenance)	100
CO	Attainment (Maintenance)	100
NO_2	Attainment (Maintenance)	100

Source: USEPA 2025e
VOC = volatile organic compound; NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; CO = carbon monoxide; NO_2 = nitrogen dioxide

5.0 AIR QUALITY IMPACT ANALYSIS

This section evaluates potential direct impacts of the proposed Project related to air pollutant emissions. Project-level air quality modeling was completed as part of this analysis. Complete modeling results are included as Appendix A to this report.

5.1 ISSUE 1: CONFLICT WITH AIR QUALITY PLANS

5.1.1 Impacts

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and addresses regional issues relating to transportation, economy, community development, and environment. With regard to air quality planning, SCAG has prepared the 2024 RTP/SCS, a long-range transportation plan that uses growth forecasts to project trends over a 25-year period to identify regional transportation strategies to address mobility needs. These growth forecasts form the basis for the land use and transportation control portions of the AQMP. These documents are utilized in the preparation of the air quality forecasts and consistency analysis included in the AQMP. Both the RTP/SCS and AQMP are based, in part, on projections originating with County and City General Plans.[2]

The two principal criteria for determining conformance to the AQMP are:

1. Whether the Project 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 and

2. Whether the Project would result in population or employment growth that exceeds the assumptions in the AQMP.

With respect to the first criterion, the analyses presented in Section 5.2, below, demonstrate that the Project would generate long-term emissions that could potentially cause 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. Specifically, Project operational emissions of NO_X (an ozone precursor) and CO would exceed the SCAQMD's maximum daily emissions thresholds, which are set for the purpose of attaining or maintaining the NAAQS and CAAQS. The SCAB is designated as non-attainment for ozone under the NAAQS and CAAQS and as maintenance for CO under the NAAQS. The AQMP specifically addresses the non-attainment status for ozone and identifies measures to reduce emissions of NO_X. The Project's exceedance of the daily emissions threshold for NO_X would therefore represent a conflict with the AQMP. While the SCAB was redesignated as attainment for CO in 2007, it is required to demonstrate ongoing attainment over a 20-year maintenance period and is subject to the CO Redesignation Request and Maintenance Plan (SCAQMD 2005a).[3] The SCAB has not exceeded the NAAQS for CO since 2002 and it is unlikely that the Project alone would result in a new exceedance of the NAAQS; however, as a result of the Project's CO emissions exceeding the SCAQMD daily emissions threshold, the Project is conservatively considered to be inconsistent with the Maintenance Plan.

With respect to the second criterion, the purpose of the Project is to expand the water supply portfolio to meet long-term projected growth in the District's service area. The Project would manage the water system in accordance with expected population growth and would not result in population growth beyond estimates for the area. In addition, jobs associated with construction and operation of the Project would likely be filled by the local labor pool and the Project would not create conditions for employment growth that exceeds growth estimates for the area. Based on these considerations, the

[2] SCAG serves as the federally designated MPO for the Southern California region.

[3] The 20-year maintenance period ended in 2025; however, the Maintenance Plan is still applicable. Refer to the discussion provided in Section 2.1.4.1.

Project could exceed the projections of the RTP/SCS and AQMP. Therefore, the Project could obstruct implementation of the AQMP.

5.1.2 Significance of Impacts

The Project could conflict with or obstruct implementation of the SCAQMD's AQMP, and the impact would be potentially significant.

5.1.3 Mitigation Framework

As shown in Section 5.2, below, Project emissions exceedance of the SCAQMD maximum daily emissions thresholds would be primarily due to stationary source emissions (the Project design option to use natural gas ICE-powered pumps in the BPS). It may be possible to reduce emissions from the natural gas ICE-powered pumps by using engines with emissions reduction systems compliant with SCAQMD Rule 1110.2 regarding emissions from stationary gaseous-fueled engines. However, as discussed in Section 6.1, below, the use of ICE-powered pumps also results in a potentially significant GHG emission impact. Mitigation Option 1 of MM-AQ-1, discussed in Section 5.2.3, requiring the use of electric pumps only in the BPS, would eliminate emissions of VOC, NOX, and CO from natural gas ICE-powered pumps. Option 2 of MM-AQ-1, allowing natural gas pumps for the 40 cubic feet per second (cfs) BPS capacity and requiring electric pumps only in the BPS for the 80 cfs and 140 BPS capacity, would reduce emissions of VOC, NOX, and CO from natural gas ICE-powered pumps.

5.1.4 Significance After Mitigation

As discussed in Section 5.2.4, with implementation of Option 1 of mitigation measure AQ-1, the Project would not result in maximum daily emissions exceeding the SCAQMD thresholds. However, it is unknown at this point in the planning process whether it would be feasible to implement mitigation option AQ-2 requiring exclusively electric pumps, due to potential operational constraints such as the need to ensure uninterrupted service during emergencies that result in power outages. While Option 2 of AQ-1 may be feasible and would reduce emissions, they would not be reduced to below a level of significance. Therefore, the Project could conflict with or obstruct implementation of the SCAQMD AQMP, SCAQMD CO Maintenance Plan, or applicable portions of the SIP. The impact would be significant and unavoidable.

5.2 ISSUE 2: CUMULATIVELY CONSIDERABLE NET INCREASE OF NONATTAINMENT CRITERIA POLLUTANTS

5.2.1 Impacts

The Project would generate criteria pollutants and precursors in the short-term during construction and the long-term during operation. In addition, initial Project operation at 40 cfs pipeline transmission capacity would occur concurrently with Phase 2 and Phase 3 construction. To determine whether the Project's emissions would result in a cumulatively considerable net increase of any criteria pollutant for which the SCAB is non-attainment, contribute substantially to a projected air quality violation, or have an adverse effect on human health, the Project's emissions were evaluated based on the quantitative emission thresholds established by the SCAQMD (as shown in Table 14). The Project's emissions were estimated using CalEEMod as described in Section 4.1. Project-specific input was based on information provided in Sections 1.0 and 4.0 and default model settings to estimate reasonably conservative

conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

5.2.1.1 Phase 1 Construction

The Project's Phase 1 turnout, BPS, and pipeline construction would result in temporary increases in air pollutant emissions. These emissions would be generated in the form of fugitive dust emissions (PM_{10} and $PM_{2.5}$) and vehicle exhaust emissions (VOCs, NO_X, and CO). Fugitive dust emissions would be generated from earth disturbance during site grading, excavation, trenching, and backfilling, as well as from construction vehicles operating on open fields or dirt roadways within or adjacent to construction sites. Vehicle exhaust emissions would occur from fuel combustion associated with the operation of heavy equipment and vehicles. Table 16, *Maximum Daily Phase I Construction Emissions*, shows the results of the emissions calculations from various combined activities that would occur concurrently.

Table 16
MAXIMUM DAILY PHASE 1 CONSTRUCTION EMISSIONS

Combined Activities	Pollutant Emissions (pounds per day)					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Turnout Vault Excavation, BPS Clearing and Grubbing, Pipe Slipline	3.2	22.0	31.6	<0.1	1.6	0.9
Turnout Vault Excavation, BPS Grading, Pipe Slipline	4.6	32.4	43.1	<0.1	5.0	2.7
Turnout Utility Installation, BPS Grading, Pipe Slipline	4.7	33.5	45.2	0.1	5.1	2.7
Turnout Vault Structure, BPS Excavation, Pipe Slipline	3.2	22.8	33.7	<0.1	1.4	0.8
Turnout Vault Structure, BPS Utility Installation, Pipe Slipline	3.1	22.2	32.0	<0.1	1.4	0.8
BPS Paving, Pipe Slipline	1.3	9.0	12.9	<0.1	0.6	0.4
BPS Site Improvement, Pipe Slipline	0.9	8.1	11.9	<0.1	0.6	0.3
BPS Structure Construction, Pipe Slipline	1.9	14.2	18.6	<0.1	0.9	0.6
BPS Architectural Coating, Pipe Slipline	23.5	15.2	21.5	<0.1	1.0	0.6
Pipe Slipline	0.7	5.5	6.8	<0.1	0.4	0.2
Maximum Daily Emissions	**23.5**	**33.5**	**45.2**	**0.1**	**5.1**	**2.7**
SCAQMD Threshold	***75***	***100***	***550***	***150***	***150***	***55***
Exceed Threshold?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A); SCAQMD 2019b
VOC = volatile organic compounds; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 16, emissions from Phase I construction activities would not exceed the SCAQMD daily thresholds.

5.2.1.2 Operations at 40 cfs Pipeline Transmission Capacity

Operational emissions of criteria pollutants and precursors include those from area sources (such as consumer products), mobile sources (on-road traffic), on-site energy use (natural gas), and stationary sources (such as generators and internal combustion engine pumps). Table 17, *Maximum Daily 40 cfs Operational Emissions (2030)*, presents the summary of emissions for operation of the Project at 40 cfs pipeline transmission capacity in 2030 following completion of Phase 1 construction.

Table 17
MAXIMUM DAILY 40 CFS OPERATIONAL EMISSIONS (2030)

Source	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Mobile	<0.1	<0.1	0.4	<0.1	0.1	<0.1
Area	1.0	<0.1	1.5	<0.1	<0.1	<0.1
Energy	<0.1	0.2	0.2	<0.1	<0.1	<0.1
Emergency Generators	1.0	4.4	2.5	<0.1	0.1	0.1
Natural Gas ICE Pumps	11.6	52.0	1,377.5	0.2	3.7	3.7
Total Maximum Daily Emissions[1]	**13.7**	**56.7**	**1,382.1**	**0.2**	**4.0**	**3.9**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceed Threshold?	***No***	***Yes***	***Yes***	***No***	***No***	***No***

Source: CalEEMod and USEPA 2024 (output data is provided in Appendix A); Thresholds: SCAQMD 2019b
[1] Total may not sum due to rounding.
VOC = volatile organic compounds; NOX = nitrogen oxides; CO = carbon monoxide; SOX = sulfur oxides; PM10 = particulate matter 10 microns or less in diameter; PM2.5 = particulate matter 2.5 microns or less in diameter; ICE = internal combustion engine

As shown in Table 17, Project operational emissions at 40 cfs pipeline transmission capacity would exceed the SCAQMD daily thresholds for NO_X and CO.

5.2.1.3 Phase 2 Construction

The Project's Phase 2 pipeline construction would result in temporary increases in air pollutant emissions. These emissions would be generated in the form of fugitive dust emissions (PM_{10} and $PM_{2.5}$) and vehicle exhaust emissions (VOCs, NO_X, and CO). Fugitive dust emissions would be generated from earth disturbance during excavation and backfilling, as well as from construction vehicles operating on open fields or dirt roadways within or adjacent to construction sites. Vehicle exhaust emissions would occur from fuel combustion associated with the operation of heavy equipment and vehicles. The results of the emissions calculations combined activities which occur concurrently are shown in Table 18, *Maximum Daily Phase 2 Construction Emissions*.

Table 18
MAXIMUM DAILY PHASE 2 CONSTRUCTION EMISSIONS

Activities	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Pipe Slipline	2.1	13.1	22.0	<0.1	0.8	0.4
SCAQMD Threshold	***75***	***100***	***550***	***150***	***150***	***55***
Exceed Threshold?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A); SCAQMD 2019b
VOC = volatile organic compounds; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 18, emissions from Phase 2 construction activities would not exceed the SCAQMD daily thresholds.

5.2.1.4 Concurrent Operations at 40 cfs and Phase 2 Construction

Due to the anticipated Project phasing, initial Project operations at 40 cfs pipeline transmission capacity would occur concurrently with Phase 2 construction in 2033. Table 19, *Concurrent Operations at 40 cfs and Phase 2 Construction Emissions*, shows the maximum daily emissions from this anticipated overlap.

Table 19
CONCURRENT OPERATIONS AT 40 CFS AND PHASE 2 CONSTRUCTION EMISSIONS

Source	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Phase 2 Construction	2.1	13.1	22.0	<0.1	0.8	0.4
Operation at 40 cfs	13.7	56.7	1,382.1	0.2	4.0	3.9
Total Maximum Daily Emissions[1]	**15.8**	**69.8**	**1,404.1**	**0.2**	**4.8**	**4.3**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceed Threshold?	***No***	***Yes***	***Yes***	***No***	***No***	***No***

Source: CalEEMod and USEPA 2024 (output data is provided in Appendix A); Thresholds: SCAQMD 2019b
[1] Total may not sum due to rounding.
VOC = volatile organic compounds; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 19, Project operational emissions at 40 cfs pipeline transmission capacity combined with Phase 2 construction would exceed the SCAQMD daily thresholds for NO_X and CO.

5.2.1.5 Phase 3 Construction

The Project's Phase 3 pipeline construction would result in temporary increases in air pollutant emissions. These emissions would be generated in the form of fugitive dust emissions (PM_{10} and $PM_{2.5}$) and vehicle exhaust emissions (VOCs, NO_X, and CO). Fugitive dust emissions would be generated from earth disturbance during excavation and backfilling, as well as from construction vehicles operating on open fields or dirt roadways within or adjacent to construction sites. Vehicle exhaust emissions would occur from fuel combustion associated with the operation of heavy equipment and vehicles. The results of the emissions calculations combined activities which occur concurrently are shown in Table 20, *Maximum Daily Phase 3 Construction Emissions*.

Table 20
MAXIMUM DAILY PHASE 3 CONSTRUCTION EMISSIONS

Combined Activities	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Trenching, Trenchless Pit Excavation	2.5	15.4	29.1	<0.1	0.9	0.5
Trenching, Trenchless Pipeline Installation	3.4	20.4	37.5	<0.1	1.2	0.6
Trenching, Trenchless Pit Backfill	3.0	17.4	32.2	<0.1	1.1	0.5
Trenching, Trenchless Pavement Repair	2.6	15.6	25.7	<0.1	0.8	0.4
Trenching	2.4	13.4	25.8	<0.1	0.8	0.4
Maximum Daily Emissions	**3.4**	**20.4**	**37.5**	**<0.1**	**1.2**	**0.6**
SCAQMD Threshold	***75***	***100***	***550***	***150***	***150***	***55***
Exceed Threshold?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A); SCAQMD 2019b
VOC = volatile organic compounds; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 20, emissions from Phase 3 construction activities would not exceed the SCAQMD daily thresholds.

5.2.1.6 Concurrent Operations at 40 cfs and Phase 3 Construction

Due to the anticipated Project phasing, initial Project operations at 40 cfs pipeline transmission capacity would occur concurrently with Phase 3 construction in 2038. Table 21, *Concurrent Operations at 40 cfs and Phase 3 Construction Emissions*, shows the maximum daily emissions from this anticipated overlap.

Table 21
CONCURRENT OPERATIONS AT 40 CFS AND PHASE 3 CONSTRUCTION EMISSIONS

Source	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Phase 3 Construction	3.4	20.4	37.5	<0.1	1.2	0.6
Operation at 40 cfs	13.7	56.7	1,382.1	0.2	4.0	3.9
Total Maximum Daily Emissions[1]	**17.1**	**77.1**	**1,419.6**	**0.2**	**5.2**	**4.5**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceed Threshold?	***No***	***Yes***	***Yes***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A); Thresholds SCAQMD 2019b
[1] Total may not sum due to rounding.
VOC = volatile organic compounds; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 21, Project operational emissions at 40 cfs pipeline transmission capacity combined with Phase 3 construction would exceed the SCAQMD daily thresholds for NO_X and CO.

5.2.1.7 Phase 4 Construction

The Project's Phase 4 pipeline construction would result in temporary increases in air pollutant emissions. These emissions would be generated in the form of fugitive dust emissions (PM_{10} and $PM_{2.5}$) and vehicle exhaust emissions (VOCs, NO_X, and CO). Fugitive dust emissions would be generated from earth disturbance during excavation and backfilling, as well as from construction vehicles operating on open fields or dirt roadways within or adjacent to construction sites. Vehicle exhaust emissions would occur from fuel combustion associated with the operation of heavy equipment and vehicles. The results of the emissions calculations combined activities which occur concurrently are shown in Table 22, *Maximum Daily Phase 4 Construction Emissions*.

Table 22
MAXIMUM DAILY PHASE 4 CONSTRUCTION EMISSIONS

Combined Activities	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Trenching, Trenchless Pit Excavation	4.9	28.7	57.4	0.1	1.7	0.8
Trenching, Trenchless Pipeline Installation	6.6	37.9	73.8	0.2	2.3	1.2
Trenching, Trenchless Pit Backfill	5.9	32.2	63.7	0.2	2.0	1.0
Trenching, Trenchless Pavement Repair	4.9	29.0	56.8	0.1	1.8	0.9
Trenching	4.6	25.6	50.7	0.1	1.6	0.8
Maximum Daily Emissions	**6.6**	**37.9**	**73.8**	**0.2**	**2.3**	**1.2**
SCAQMD Threshold	***75***	***100***	***550***	***150***	***150***	***55***

Combined Activities	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Exceed Threshold?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A); SCAQMD 2019b
VOC = volatile organic compounds; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 22, emissions from Phase 4 construction activities would not exceed the SCAQMD daily thresholds.

5.2.1.8 Operations at 80 cfs Pipeline Transmission Capacity

Operational emissions of criteria pollutants and precursors include those from area sources (such as consumer products), mobile sources (on-road traffic), on-site energy use (natural gas), and stationary sources (such as generators and internal combustion engine pumps). Table 23, *Maximum Daily 80 cfs Operational Emissions (2045)*, presents the summary of emissions for operation of the Project at 80 cfs pipeline transmission capacity in 2045 following completion of Phase 4 construction.

Table 23
MAXIMUM DAILY 80 CFS OPERATIONAL EMISSIONS (2045)

Source	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Mobile	<0.1	<0.1	0.3	<0.1	0.1	<0.1
Area	1.0	<0.1	1.5	<0.1	<0.1	<0.1
Energy	<0.1	0.2	0.2	<0.1	<0.1	<0.1
Emergency Generators	1.0	4.4	2.5	<0.1	0.1	0.1
Natural Gas ICE Pumps	22.9	102.1	2,711.9	0.5	7.3	7.3
Total Maximum Daily Emissions[1]	**25.0**	**106.7**	**2,716.4**	**0.5**	**7.6**	**7.5**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceed Threshold?	***No***	***Yes***	***Yes***	***No***	***No***	***No***

Source: CalEEMod and USEPA 2024 (output data is provided in Appendix A); Thresholds: SCAQMD 2019b
[1] Total may not sum due to rounding.
VOC = volatile organic compounds; NOX = nitrogen oxides; CO = carbon monoxide; SOX = sulfur oxides; PM10 = particulate matter 10 microns or less in diameter; PM2.5 = particulate matter 2.5 microns or less in diameter; ICE = internal combustion engine

As shown in Table 23, Project operational emissions at 80 cfs pipeline transmission capacity would exceed the SCAQMD daily thresholds for NO_X and CO.

5.2.1.9 Operations at 140 cfs Pipeline Transmission Capacity

Operational emissions of criteria pollutants and precursors include those from area sources (such as consumer products), mobile sources (on-road traffic), on-site energy use (natural gas), and stationary sources (such as generators and internal combustion engine pumps). The pipeline transmission capacity of 140 cfs is anticipated to be needed at projected buildout of the Perris Valley area in 2080. However, CalEEMod does not have data for calculating emissions beyond 2050. Therefore, Table 24, *Maximum Daily 140 cfs Operational Emissions (2050)*, conservatively presents the summary of emissions for operation of the Project at 140 cfs pipeline transmission capacity in 2050.

Table 24
MAXIMUM DAILY 140 CFS OPERATIONAL EMISSIONS (2050)

Source	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Mobile	<0.1	<0.1	0.3	<0.1	0.1	<0.1
Area	1.0	<0.1	1.5	<0.1	<0.1	<0.1
Energy	<0.1	0.2	0.2	<0.1	<0.1	<0.1
Emergency Generators	1.0	4.4	2.5	<0.1	0.1	0.1
Natural Gas ICE Pumps	39.2	175.6	4,646.0	0.8	12.6	12.6
Total Maximum Daily Emissions[1]	**41.3**	**180.2**	**4,650.5**	**0.8**	**12.8**	**12.7**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceed Threshold?	***No***	***Yes***	***Yes***	***No***	***No***	***No***

Source: CalEEMod and USEPA 2024 (output data is provided in Appendix A); Thresholds: SCAQMD 2019b
[1] Total may not sum due to rounding.
VOC = volatile organic compounds; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ICE = internal combustion engine

As shown in Table 24, Project operational emissions at 140 cfs pipeline transmission capacity would exceed the SCAQMD daily thresholds for NO_X and CO.

5.2.2 Significance of Impacts

As shown in Tables 17, 19, 21, 23, and 24, Project operational emissions of NO_X and CO would exceed the SCAQMD's maximum daily emissions threshold and the impact under CEQA would be potentially significant.

5.2.3 Mitigation Framework

Project emissions exceedance of the SCAQMD maximum daily emissions thresholds would be primarily due to the Project design option to use of natural gas ICE-powered pumps in the BPS. Two mitigation options are considered herein as part of mitigation measure (MM)-AQ-1. Option 1, an all-electric pump option, would require the use of electric pumps in the BPS for all pumping capacities. Option 2, a combination of natural gas and electric pumps option, would allow the use of natural gas ICE-powered BPS pumps for 40 cfs capacity in 2030, but require that electric BPS pumps be used for additional capacity added to achieve 80 cfs in 2045 and 140 cfs in 2080. Both mitigation measure options assume sufficient emergency generators to operate all electric duty pumps at full capacity.

MM-AQ-1 **Booster Pump Station Pumps**. To reduce air pollutant emissions during operation of the Project, Eastern Municipal Water District (EMWD) shall implement one of the following options for the booster pump station (BPS) pumps:

Option 1 – Electric-Only Pumps: All pumps used for water conveyance in the Project BPS shall be electrically powered and shall not be directly driven by internal combustion engines. Prior to approving the Project design or future upgrades to the Project BPS, EMWD shall ensure that all plans include electric water conveyance pumps only.

Option 2 – Combination of Electric and Natural Gas Pumps: If EMWD determines that it is infeasible for all pumps to be electrically powered, pumps used for the initial 40 cubic

feet per second (cfs) water conveyance capacity in the Project booster pump station (BPS) in 2030 could be directly driven by natural gas internal combustion engines. Additional capacity added to achieve 80 cfs in 2045 and 140 cfs in 2080 shall use electrically powered pumps and shall not be directly driven by internal combustion engines. Prior to approving the Project future upgrades to the Project BPS, the District shall ensure that all plans include electric water conveyance pumps only for water conveyance capacities beyond 40 cfs.

5.2.4 Significance After Mitigation

Mitigation Measure MM-AQ-1 Option 1: Electric pumps only.

Project maximum daily operational emissions of criteria pollutants and precursors with implementation of MM-AQ-1 Option 1, requiring the use of electric pumps only in the BPS, are compared to the SCAQMD thresholds in Table 25, *Maximum Daily Operational Emissions with Mitigation Measure MM-AQ-1 Option 1 (Electric-Only Pumps)*.

Table 25
MAXIMUM DAILY OPERATIONAL EMISSIONS WITH MITIGATION MEASURE MM-AQ-1 OPTION 1 (ELECTRIC-ONLY PUMPS)

Source	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Project Operation at 40 cfs (2030)	2.9	8.3	6.7	<0.1	0.4	0.3
Concurrent Phase 2 Construction and Project Operation at 40 cfs (2033)	5.0	21.4	28.7	<0.1	1.2	0.7
Concurrent Phase 3 Construction and Project Operation at 40 cfs (2038)	6.3	28.7	44.2	<0.1	1.6	0.9
Project Operation at 80 cfs (2045)	4.7	16.4	11.2	<0.1	0.7	0.6
Project Operation at 140 cfs (2050)	7.2	27.4	17.4	<0.1	1.0	0.9
Maximum Daily Emissions	**7.2**	**28.7**	**44.2**	**<0.1**	**1.6**	**0.9**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceed Threshold?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod and USEPA 2024 (output data is provided in Appendix A); Thresholds: SCAQMD 2019b
VOC = volatile organic compounds; NOX = nitrogen oxides; CO = carbon monoxide; SOX = sulfur oxides; PM10 = particulate matter 10 microns or less in diameter; PM2.5 = particulate matter 2.5 microns or less in diameter; ICE = internal combustion engine

As shown in Table 25, with implementation of mitigation measure MM-AQ-1 Option 1 requiring electric pumps only in the BPS, the Project would not result in maximum daily emissions exceeding the SCAQMD thresholds.

It is unknown at this point in the planning process whether it would be feasible to implement mitigation measure MM-AQ-1 Option 1 requiring exclusively electric pumps, due to potential operational constraints such as the need to ensure uninterrupted service during emergencies that result in power outages.

Mitigation Measure MM-AQ-1 Option 2: A combination of natural gas ICE pumps and electric pumps.

Project maximum daily operational emissions of criteria pollutants and precursors with implementation of MM-AQ-1 Option 2, allowing the use of natural gas ICE pumps for the initial 40 cfs capacity and requiring the use of electric pumps for the 80 cfs and 140 cfs capacities, are compared to the SCAQMD thresholds in Table 26, *Maximum Daily Operational Emissions with Mitigation Measure MM-AQ-1 Option 2 (Combination of Electric and Natural Gas Pumps)*.

Table 26
MAXIMUM DAILY OPERATIONAL EMISSIONS WITH MITIGATION MEASURE MM-AQ-1 OPTION 2 (COMBINATION OF ELECTRIC AND NATURAL GAS PUMPS)

Source	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Project Operation at 40 cfs (2030)	13.7	56.7	1,382.1	0.2	4.0	3.9
Concurrent Phase 2 Construction and Project Operation at 40 cfs (2033)	15.8	69.8	1,404.1	0.2	4.8	4.3
Concurrent Phase 3 Construction and Project Operation at 40 cfs (2038)	17.1	77.1	1,419.6	0.2	5.2	4.5
Project Operation at 80 cfs (2045)	15.5	64.7	1,386.6	0.2	4.2	4.2
Project Operation at 140 cfs (2050)	17.9	75.7	1,392.8	0.2	4.6	4.5
Maximum Daily Emissions	**17.9**	**77.1**	**1,419.6**	**0.2**	**5.2**	**4.5**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceed Threshold?	***No***	***Yes***	***Yes***	***No***	***No***	***No***

Source: CalEEMod and USEPA 2024 (output data is provided in Appendix A); Thresholds: SCAQMD 2019b
VOC = volatile organic compounds; NOX = nitrogen oxides; CO = carbon monoxide; SOX = sulfur oxides; PM10 = particulate matter 10 microns or less in diameter; PM2.5 = particulate matter 2.5 microns or less in diameter; ICE = internal combustion engine

As shown in Table 25, with implementation of mitigation measure MM-AQ-1 Option 2 requiring a combination of natural gas ICE pumps and electric pumps, the Project emissions would decrease compared to unmitigated emissions but would still result in maximum daily emissions exceeding the SCAQMD thresholds for NO_X and CO.

Therefore, the Project could result in a cumulatively considerable net increase the ozone precursor NO_X and in CO. Because the SCAB is non-attainment for ozone under the applicable NAAQS and CAAQS, this impact would be significant and unavoidable. Although the SCAB is designated as maintenance for CO under the NAAQS and as attainment for CO under the CAAQS, impacts related to regional CO emissions are conservatively considered significant and unavoidable because they exceed SCAQMD's daily threshold.

5.3 ISSUE 3: IMPACTS TO SENSITIVE RECEPTORS

5.3.1 Construction Activities

5.3.1.1 Criteria Pollutants

The localized effects from the on-site portion of daily construction and operational emissions were evaluated at sensitive receptor locations potentially impacted by the Project according to the SCAQMD's LST method, described above. Sensitive receptors include residences, which are located at various places along the roadways where the pipelines are proposed. The exact location of the BPS is yet to be determined, but the closest residences are along the east side of Van Gaale Lane, which could be as

close as 70 feet to the BPS. Consistent with the LST guidelines, when quantifying mass emissions for localized analysis, only emissions that occur on-site are considered. Emissions related to off-site delivery/haul truck activity and construction worker trips are not considered in the evaluation of construction-related localized impacts, as these mobile emissions are spread along area roadways and are not localized.

Table 27, *Maximum Localized Daily Construction Emissions*, shows the maximum localized construction emissions, accounting for fugitive dust control measures to water exposed surfaces twice daily, for each phase in comparison with the applicable LSTs.

Table 27
MAXIMUM LOCALIZED DAILY CONSTRUCTION EMISSIONS

Concurrent Construction Activities	Pollutant Emissions (pounds per day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Phase 1 Turnout Utility Installation, BPS Grading	17.1	21.1	3.7	2.0
SCAQMD LST (SRA 26, 2 acres; 25 meters)	*234*	*1,100*	*7*	*4*
Exceed LST (SRA 26, 2 acres; 25 meters)?	***No***	***No***	***No***	***No***
Phase 1 Pipe Sliplining	15.3	20.9	0.5	0.5
Phase 2 Pipe Sliplining	12.9	20.6	0.4	0.3
Phase 3 Trenching, Trenchless Pipeline Installation	20.3	35.6	0.5	0.5
Phase 4 Trenching, Trenchless Pipeline Installation	37.8	70.4	0.9	0.8
SCAQMD LST (SRA 24, 1 acre; 25 meters)	*118*	*602*	*4*	*3*
Exceed LST (SRA 24, 1 acre; 25 meters)?	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 27, construction period localized emissions of NO_X, CO, PM_{10}, and $PM_{2.5}$ would remain below their respective SCAQMD LSTs.

5.3.1.2 Toxic Air Contaminants

Construction of the Project would result in the use of heavy-duty construction equipment, haul trucks, portable generators, and construction worker vehicles. These vehicles and equipment could generate the TAC DPM. Generation of DPM from construction projects typically occurs in a localized area (e.g., at the project site) for a short period of time. Because construction activities and subsequent emissions vary depending on the phase of construction (e.g., grading, building construction), the construction-related emissions to which nearby receptors are exposed would also vary throughout the construction period. During some equipment-intensive phases, such as grading, construction-related emissions would be higher than in other less equipment-intensive phases, such as building construction. DPM disperses rapidly, and concentrations of mobile-source DPM emissions are typically reduced by 70 percent at approximately 500 feet (CARB 2005).

The dose (of TAC) to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has with the substance; a longer exposure period to a fixed quantity of emissions would result in higher health risks. Current models and methodologies for conducting cancer health risk assessments are associated with longer-term exposure periods (typically 30 years for individual residents based on guidance from OEHHA) and are best suited for evaluation of long duration TAC emissions with

predictable schedules and locations. These assessment models and methodologies do not correlate well with the temporary and highly variable nature of construction activities. Cancer potency factors are based on animal lifetime studies or worker studies where there is long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime (OEHHA 2015). Considering this information, the highly dispersive nature of DPM, the short duration of construction grading activities (approximately 2 months), and the fact that intensive use of heavy construction equipment for pipeline construction activities would occur at one single location only for relatively short periods, construction of the Project would not expose sensitive receptors to substantial DPM concentrations.

5.3.2 Operational Activities

5.3.2.1 Carbon Monoxide Hotspots

A CO hotspot is an area of localized CO pollution caused by severe vehicle congestion on major roadways, typically near intersections. A quantitative screening is required in two instances: (1) if a project increases the average delay at signalized intersections operating at Level of Service (LOS) E or F; or (2) if a project would cause an intersection that would operate at LOS D or better without the project to operate at LOS E or F with the project. Vehicular traffic generated during operation of the proposed Project would be limited to approximately 10 daily trips from District personnel and deliveries. This would result in a low number of average daily vehicle trips and the Project would neither cause new severe congestion nor significantly worsen existing congestion at nearby intersections. There would be no potential for a CO hotspot or exposure of sensitive receptors to substantial, Project-generated, local CO emissions. The impact would be less than significant.

5.3.2.2 Toxic Air Contaminants

During Project operations, water treatment chemicals, including sodium hypochlorite and ammonium sulfate, could be used at the BPS if the chemical feed facility is needed in the future. Vapors emitted from chemicals to be used during operation of the BPS could include TACs. Chemicals would be stored in conformance with the California Fire Code and California Mechanical Code and would include approved storage containers, mechanical ventilation, spill control and secondary containment, and appropriate hazardous chemicals storage signage. Where required, the chemical storage areas would also include monitor control equipment, gas detection systems, and fire detection systems. Further, the Project would prepare and comply with a Hazardous Materials Business Plan and Risk Management Plan, as managed and overseen by the Riverside County Department of Environmental Health Hazardous Materials Branch, which would minimize potential hazards associated with the use of chemicals on site. As such, although potentially hazardous chemicals would be used at the BPS site, they would be used and stored in accordance with applicable regulations such that the Project would not expose sensitive receptors to substantial TAC concentrations through the routine transport, use, or disposal of water treatment chemicals.

The Project would include diesel-powered emergency generators which are a source of the TAC DPM. In addition, exhaust from natural gas ICE engines used to directly drive pumps in the BPS would include emissions of the TACs formaldehyde, acetaldehyde, propionaldehyde, acrolein, benzene, xylenes, toluene, 1,3-butadiene, and ethylbenzene (USEPA 2024). The health risk impacts resulting from exposure of sensitive receptors to substantial concentrations of TAC in diesel generator exhaust and natural gas ICE pump exhaust is dependent on: the size and number of diesel generators and natural gas

ICE pumps installed, the emission control systems installed on the engines, and the distance from the diesel generators and natural gas ICE pumps to sensitive receptor locations. Because the Project BPS final design and location have not been determined at the time of this analysis, the Project could expose sensitive receptors to substantial concentrations of TAC from diesel generators and natural gas ICE pumps.

5.3.2.3 Criteria Pollutants

The localized effects from the on-site portion of daily operational emissions were evaluated at sensitive receptor locations potentially impacted by the Project according to the SCAQMD's LST method, described above. Table 28, *Maximum Localized Daily Operational Emissions*, shows the maximum localized emissions for operation of the BPS in comparison with the applicable LSTs. Operational localized emissions include all emissions sources produced on the Project site (area, energy, and stationary sources). The BPS site is approximately 2.8 acres and the corresponding LSTs are for SRA 26, 5 acres, and receptors within 25 meters.

Table 28
MAXIMUM LOCALIZED DAILY OPERATIONAL EMISSIONS

Operational Pipeline Transmission Capacity	Pollutant Emissions (pounds per day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Project Operation at 40 cfs (2030)	56.7	1,381.6	3.9	3.9
Project Operation at 80 cfs (2045)	107.1	2,716.1	7.5	7.5
Project Operation at 140 cfs (2050)	180.2	4,653.2	12.8	12.8
SCAQMD LST (SRA 26, 5 acres; 25 meters)	*371*	*1,965*	*4*	*2*
Exceed LST (SRA 26, 5 acres; 25 meters)?	***No***	***Yes***	***Yes***	***Yes***

Source: CalEEMod and USEPA 2024 (output data is provided in Appendix A)
NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 28, localized daily operational emissions would exceed the LST for $PM_{2.5}$ at all analyzed pipeline transmission capacities, and exceed the LSTs for CO and PM_{10} for pipeline transmission capacities of 80 cfs and higher.

5.3.3 Significance of Impacts

Project-generated traffic would not result in a carbon monoxide hot spot. Construction of the Project would not result in exposure of sensitive receptors to substantial quantities of toxic air contaminants. The Project could expose sensitive receptors to substantial concentrations of TAC from diesel generators and natural gas ICE pumps during operations. In addition, as shown in Table 28, localized daily operational emissions would exceed the LST for $PM_{2.5}$ at all analyzed pipeline transmission capacities, and exceed the LSTs for CO and PM_{10} for pipeline transmission capacities of 80 cfs and higher. Therefore, the impact related to exposure of sensitive receptors to substantial pollutant concentrations would be potentially significant.

5.3.4 Mitigation Framework

Project emissions exceedance of the SCAQMD LSTs would be primarily due to stationary source emissions (the Project design option to use natural gas ICE-powered pumps in the BPS). MM AQ01, requiring the use of electric pumps in the BPS, would eliminate (under mitigation Option 1) or reduce (under mitigation Option 2) emissions of NO_X, CO, PM_{10}, and $PM_{2.5}$ from natural gas ICE-powered pumps.

MM-AQ-2 would require a health risk screening or a health risk assessment be completed prior to installing diesel generators or natural gas ICE pumps at the Project BPS.

MM-AQ-2 **Booster Pump Station Health Risk Assessment**. Prior to approving the installation of diesel-power generators or natural gas internal combustion engine (ICE) driven pump in the Project booster pump station (BPS) or future upgrades to the Project BPS, the District shall complete a health risk assessment (HRA) using methodology approved by the South Coast Air Quality Management District (SCAQMD) and the Office of Environmental Health Hazard Assessment (OEHHA). If the results of the HRA show exceedance of health risk thresholds adopted by the SCAQMD, the District shall identify and implement measures to reduce health risks to affected sensitive receptors to acceptable levels.

5.3.5 Significance After Mitigation

Mitigation Measure MM-AQ-1 Option 1: Electric pumps only.

Table 29, *Maximum Localized Daily Operational Emissions with Mitigation Measure MM-AQ-1 Option 1 (Electric-Only Pumps)*, shows the maximum localized emissions for operation of the BPS with implementation of Option 1 of MM-AQ-1.

Table 29
MAXIMUM LOCALIZED DAILY OPERATIONAL EMISSIONS WITH MITIGATION MEASURE MM-AQ-1 OPTION 1 (ELECTRIC-ONLY PUMPS)

Operational Pipeline Transmission Capacity	Pollutant Emissions (pounds per day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Project Operation at 40 cfs (2030)	8.1	6.3	0.3	0.3
Project Operation at 80 cfs (2045)	16.4	10.9	0.6	0.6
Project Operation at 140 cfs (2050)	27.4	17.1	0.9	0.9
SCAQMD LST (SRA 26, 5 acres; 25 meters)	*371*	*1,965*	*4*	*2*
Exceed LST (SRA 26, 5 acres; 25 meters)?	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 29, with implementation of MM-AQ-1 Option 1, the Project would not result in maximum daily emissions exceeding the SCAQMD's LSTs. However, it is unknown at this point in the planning process whether it would be feasible to implement exclusively electric pumps, due to potential operational constraints such as the need to ensure uninterrupted service during emergencies that result in power outages.

Mitigation Measure MM-AQ-1 Option 2: A combination of natural gas ICE pumps and electric pumps.

Table 30, *Maximum Localized Daily Operational Emissions with Mitigation Measure MM-AQ-1 Option 2 (Combination of Electric and Natural Gas Pumps)*, shows the maximum localized emissions for operation of the BPS with implementation of Option 2 of MM-AQ-1.

Table 30
MAXIMUM LOCALIZED DAILY OPERATIONAL EMISSIONS WITH MITIGATION MEASURE MM-AQ-1 OPTION 2 (COMBINATION OF ELECTRIC AND NATURAL GAS PUMPS)

Operational Pipeline Transmission Capacity	Pollutant Emissions (pounds per day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Project Operation at 40 cfs (2030)	56.7	1,381.6	3.9	3.9
Project Operation at 80 cfs (2045)	64.7	1,385.9	4.2	4.2
Project Operation at 140 cfs (2050)	75.7	1,392.5	4.5	4.5
SCAQMD LST (SRA 26, 5 acres; 25 meters)	*371*	*1,965*	*4*	*2*
Exceed LST (SRA 26, 5 acres; 25 meters)?	*No*	*No*	***Yes***	***Yes***

Source: HELIX 2025a (Appendix C)
NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 30, with implementation of mitigation measure MM-AQ-1 Option 2, the Project would result in maximum daily emissions of PM_{10} and $PM_{2.5}$ exceeding the SCAQMD's LSTs.

In addition, after completion of an HRA in accordance with MM-AQ-3, there may not be feasible mitigation to fully reduce health risks to nearby sensitive receptors to below the SCAQMD thresholds. Therefore, the Project could expose sensitive receptors to substantial pollutant concentrations, and the impact would be significant and unavoidable.

5.4 ISSUE 4: ODORS AND OTHER EMISSIONS

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting activities, refineries, landfills, dairies, and fiberglass molding operations (SCAQMD 1993). The Project, involving a potable water pumping station and water transmission facilities, would not include any of the land uses typically associated with odor complaints.

Emissions from construction equipment, such as diesel exhaust, and VOCs from architectural coatings and paving activities may generate odors; however, these odors would be temporary, intermittent, and not expected to affect a substantial number of people. Additionally, noxious odors would be confined to the immediate vicinity of construction equipment. Use of diesel-powered equipment during Project construction would be required to comply with CCR Title 13, Sections 2449(d)(3) and 2485, which minimize the idling time of construction equipment either by requiring it to be shut off when not in use and by limiting the time of idling to no more than five minutes. This limitation on idling reduces diesel exhaust, thereby reducing emissions leading to odors. The Project would also be required to comply with SCAQMD Rule 1113, which limits the allowable VOC content in paint and other coatings, reducing VOC emissions leading to odors. Furthermore, short-term construction-related odors are expected to cease upon the drying or hardening of the odor-producing materials. Therefore, the Project would not create objectionable odors affecting a substantial number of people.

5.4.1 Significance of Impacts

Implementation of the Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, and the impact would be less than significant.

5.4.2 Mitigation Framework

Impacts would be less than significant; therefore, no mitigation measures are required.

5.4.3 Significance After Mitigation

Implementation of the Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, and the impact would be less than significant.

6.0 GREENHOUSE GAS IMPACT ANALYSIS

This section evaluates potential impacts of the proposed Project related to the generation of GHG emissions. Complete modeling results are included as Appendix A of this report.

6.1 ISSUE 1: GREENHOUSE GAS EMISSIONS

6.1.1 Impacts

6.1.1.1 Construction Emissions

Project construction GHG emissions were estimated using the CalEEMod model as described in Sections 4.1 and 4.2.

Emissions of GHGs related to the construction of the Project would be temporary. As shown in Table 31, *Construction GHG Emissions*, total GHG emissions associated with construction of the Project are estimated at 5,526 MT CO_2e. For construction emissions, SCAQMD guidance recommends that the emissions be amortized (i.e., averaged) over 30 years and added to operational emissions for comparison with the applicable threshold. Averaged over 30 years, the proposed construction activities would contribute approximately 184.3 MT CO_2e emissions per year.

Table 31
CONSTRUCTION GHG EMISSIONS

Phase/Year	Emissions (MT CO_2e)
Phase 1 / 2028 - 2029	709.3
Phase 2 / 2033 - 2034	986.7
Phase 3 / 2038 - 2039	1,279.6
Phase 4 / 2042 - 2043	2,550.2
Total[1]	**5,525.8**

Phase/Year	Emissions (MT CO_2e)
Amortized Construction Emissions[2]	*184.3*

Source: CalEEMod (output data is provided in Appendix A)
[1] Totals may not sum due to rounding.
[2] Construction emissions are amortized over the anticipated Project lifespan of 30 years.
GHG = greenhouse gas; MT = metric tons; CO_2e = carbon dioxide equivalent

6.1.1.2 Operational Emissions

The Project's operational GHG emissions were estimated using CalEEMod and off-model calculations for emissions from natural gas ICE pumps as described in Sections 4.1 and 4.2. To provide a conservative assessment, this analysis assumes that the Project's pumps at the BPS would be powered by natural gas ICEs. Note that CalEEMod does not contain data for future reductions in GHG intensity factors for electricity generation or procurement by SCE. Therefore, the Project operational GHG emissions are conservative (high) and based on 2022 SCE GHG intensity factors and do not account for future energy source reductions required by SB 350, SB 100, and AB 1279.

Operations at 40 cfs Pipeline Transmission Capacity

The Project's annual GHG emissions for initial operation at a pipeline transmissions capacity of 40 cfs (2030) including amortized annual construction emissions, are shown in Table 32, *Operational GHG Emissions at 40 CFS (2030)*. Appendix A contains the CalEEMod output files.

Table 32
OPERATIONAL GHG EMISSIONS AT 40 CFS (2030)

Emission Sources	2030 Emissions (MT CO_2e)
Vehicular (Mobile)	14.7
Area	0.7
Energy	95.7
Water/Wastewater	16.8
Solid Waste	12.9
Refrigerants	1.4
Emergency Generators	22.9
Natural Gas ICE Pumps	6,601.6
Amortized Construction (30 years)	184.3
Project Total[1]	**6,951.2**
SCAQMD Industrial Threshold	*10,000*
Exceed Threshold?	**No**

Source: CalEEMod and USEPA 2024 (output data is provided in Appendix A)
[1] Totals may not sum due to rounding.
GHG = greenhouse gas; MT = metric tons; CO_2e = carbon dioxide equivalent; ICE = internal combustion engine

As shown in Table 32, the Project's annual GHG emissions for initial operation at a pipeline transmissions capacity of 40 cfs (2030) would not exceed the SCAQMD industrial threshold.

Operations at 80 cfs Pipeline Transmission Capacity

The Project's annual GHG emissions for operation at a pipeline transmissions capacity of 80 cfs (2045) including amortized annual construction emissions, are shown in Table 33, *Operational GHG Emissions at 80 CFS (2045)*. Appendix A contains the CalEEMod output files.

Table 33
OPERATIONAL GHG EMISSIONS AT 80 CFS (2045)

Emission Sources	2045 Emissions (MT CO_2e)
Vehicular (Mobile)	12.5
Area	0.7
Energy	95.7
Water/Wastewater	16.8
Solid Waste	12.9
Refrigerants	1.4
Emergency Generators	22.9
Natural Gas ICE Pumps	12,996.9
Amortized Construction (30 years)	184.3
Project Total[1]	**13,344.2**
SCAQMD Industrial Threshold	*10,000*
Exceed Threshold?	**Yes**

Source: CalEEMod and USEPA 2024 (output data is provided in Appendix A)
[1] Totals may not sum due to rounding.
GHG = greenhouse gas; MT = metric tons; CO_2e = carbon dioxide equivalent; ICE = internal combustion engine

As shown in Table 33, the Project's annual GHG emissions for initial operation at a pipeline transmissions capacity of 80 cfs (2045) would exceed the SCAQMD industrial threshold.

Operations at 140 cfs Pipeline Transmission Capacity

Because CalEEMod does not contain data to allow analysis beyond 2050, emissions from the Project at full buildout of the Perris Valley area in 2080 were conservatively analyzed in CalEEMod for 2050. The Project's annual GHG emissions for operation at a pipeline transmissions capacity of 140 cfs (2050) including amortized annual construction emissions, are shown in Table 34, *Operational GHG Emissions at 140 CFS (2050)*. Appendix A contains the CalEEMod output files.

Table 34
OPERATIONAL GHG EMISSIONS AT 140 CFS (2050)

Emission Sources	2050 Emissions (MT CO_2e)
Vehicular (Mobile)	12.3
Area	0.7
Energy	95.7
Water/Wastewater	16.8
Solid Waste	12.9
Refrigerants	1.4
Emergency Generators	22.9
Natural Gas ICE Pumps	**22,280.4**

Emission Sources	2050 Emissions (MT CO_2e)
Amortized Construction (30 years)	184.3
Project Total[1]	**22,627.5**
SCAQMD Industrial Threshold	*10,000*
Exceed Threshold?	**Yes**

Source: CalEEMod and USEPA 2024 (output data is provided in Appendix A)

[1] Totals may not sum due to rounding.

GHG = greenhouse gas; MT = metric tons; CO_2e = carbon dioxide equivalent; ICE = internal combustion engine

As shown in Table 34, the Project's annual GHG emissions for initial operation at a pipeline transmissions capacity of 140 cfs (2050) would exceed the SCAQMD industrial threshold.

6.1.2 Significance of Impacts

As shown in Tables 32 and 33, Project operational GHG emissions would exceed the SCAQMD's industrial threshold for operations at 80 and higher cfs pipeline transmission capacity, and the impact would be potentially significant.

6.1.3 Mitigation Framework

Project emissions exceedance of the SCAQMD industrial GHG emissions threshold would be primarily due to stationary source emissions (the Project design option to use natural gas ICE-powered pumps in the BPS). As discussed in Section 5.2.3, two mitigation options are considered herein as part of MM-AQ-1. Option 1, all-electric pumps, would require the use of electric pumps in the BPS for all pumping capacities. Option -2, a combination of natural gas and electric pumps option, would allow the use of natural gas ICE BPS pumps for 40 cfs capacity in 2030, but require electric BPS pumps be used for additional capacity added to achieve 80 cfs in 2045 and 140 cfs in 2080. Both mitigation options assume sufficient emergency generators to operate all electric duty pumps at full capacity.

6.1.4 Significance After Mitigation

Project operational GHG emissions, including amortized construction emissions, with implementation of Option 1 of MM-AQ-2, requiring the use of electric pumps only in the BPS are compared to the SCAQMD industrial threshold in Table 35, *Mitigated Operational GHG Emissions with Mitigation Measure MM-AQ-1 Option 1 (Electric-Only Pumps)*. As noted above, CalEEMod does not contain data for future reductions in GHG intensity factors for electricity generation or procurement by SCE. Therefore, the Project operational GHG emissions are conservative (high) and based on 2022 SCE GHG intensity factors and do not account for future energy source reductions required by SB 350, SB 100, and AB 1279.

Table 35
MITIGATED OPERATIONAL GHG EMISSIONS WITH MITIGATION MEASURE MM-AQ-1 OPTION 1 (ELECTRIC-ONLY PUMPS)

Pipeline Transmission Capacity	Emissions (MT CO_2e)
Project Operation at 40 cfs (2030)	2,029.9
Project Operation at 80 cfs (2045)	3,765.5
Project Operation at 140 cfs (2050)	6,418.2
SCAQMD Industrial Threshold	*10,000*
Exceed Threshold?	**No**

Source: CalEEMod and USEPA 2024 (output data is provided in Appendix A)
GHG = greenhouse gas; MT = metric tons; CO_2e = carbon dioxide equivalent

As shown in Table 35, with implementation of mitigation Option 1, the Project would result in GHG emissions exceeding the SCAQMD industrial threshold. However, it is unknown at this point in the planning process whether it would be feasible to implement the mitigation Option 1 due to potential operational constraints such as the need to ensure uninterrupted service during emergencies that result in power outages.

Project operational GHG emissions, including amortized construction emissions, with implementation of Option 2 of MM-AQ-1, allowing the use of natural gas ICE pumps for the initial 40 cfs capacity and requiring the use of electric pumps for the 80 cfs and 140 cfs capacities, are compared to the SCAQMD industrial threshold in Table 36, *Mitigated Operational GHG Emissions with Mitigation Measure MM-AQ-1 Option 2 (Combination of Electric and Natural Gas Pumps)*. Note, CalEEMod does not contain data for future reductions in GHG intensity factors for electricity generation or procurement by SCE. Therefore, the Project operational GHG emissions are conservative (high) and based on 2022 SCE GHG intensity factors and do not account for future energy source reductions required by SB 350, SB 100, and AB 1279 (see Section 2.2.4).

Table 36
MITIGATED OPERATIONAL GHG EMISSIONS WITH MITIGATION MEASURE MM-AQ-1 OPTION 2 (COMBINATION OF ELECTRIC AND NATURAL GAS PUMPS)

Pipeline Transmission Capacity	Emissions (MT CO_2e)
Project Operation at 40 cfs (2030)	6,951.2
Project Operation at 80 cfs (2045)	8,690.0
Project Operation at 140 cfs (2050)	12,227.5
SCAQMD Industrial Threshold	*10,000*
Exceed Threshold?	**Yes**

Source: CalEEMod and USEPA 2024 (output data is provided in Appendix A)
GHG = greenhouse gas; MT = metric tons; CO_2e = carbon dioxide equivalent

As shown in Table 36, with implementation of mitigation Option 2, the Project would result in GHG emissions exceeding the SCAQMD industrial threshold for the 140 cfs capacity. Therefore, the Project could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, and the impact would be significant and unavoidable.

6.2 ISSUE 2: CONFLICT WITH APPLICABLE PLANS ADOPTED FOR THE PURPOSE OF REDUCING GREENHOUSE GAS EMISSIONS

6.2.1 Impacts

There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the LCFS, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the Statewide level; as such, compliance at the project level is not addressed. Impacts are evaluated based on whether the Project would conflict with or obstruct implementation of the CARB's 2022 Scoping Plan at the state level, and the SCAGs 2024 RTP/SCS at the regional level.

6.2.1.1 2022 Scoping Plan

As discussed in Section 2.2.4, the 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by AB 1279. Appendix D to the 2022 Scoping Plan includes recommendations for local government actions that align with the State's climate goals, with a focus on local GHG reduction strategies and approval of new land use development. The 2022 Scoping Plan appendix identifies three priority areas that address the State's largest sources of emissions that local governments have authority or influence over:

1. Transportation electrification
2. VMT reduction
3. Building decarbonization

As a water infrastructure facility with no residential component and no occupiable buildings, transportation electrification would not be applicable to the Project. Vehicular traffic and VMT generated during operation of the proposed Project would be limited to approximately 10 daily trips from District personnel and deliveries. However, as discussed in Section 6.1, the use of CNE ICE-powered water conveyance pumps would result in potentially significant stationary source GHG emissions from the use of fossil fuel (natural gas). Therefore, the Project could conflict with the 2022 Scoping Plan.

6.2.1.2 2024 RTP/SCS

As required by SB 375, the primary goal of the 2024 RTP/SCS is to provide a framework for future growth that will decrease per capita GHG emissions from cars and light-duty trucks based on land use planning and transportation options. To accomplish this goal, the 2024 RTP/SCS identifies various strategies to reduce per capita VMT. The 2024 RTP/SCS is expected the help SCAG reach its GHG reduction goals, as identified by CARB, with reductions in per capita passenger vehicle GHG emissions for specified target years (SCAG 2024).

The Project would not directly contribute to any population growth in the region. Jobs associated with construction and operation of the Project would likely be filled by the local labor pool and the Project would not create conditions for employment growth that exceeds growth estimates for the area. Therefore, the Project would not conflict with the 2024 RTP/SCS.

6.2.1.3 Riverside County 2019 Climate Action Plan Update

The Riverside County 2019 CAP Update contains measures to reduce GHG emissions from water and wastewater treatment sources, including:

R1-W1 – Renewable Portfolio Standard Related to Water Supply and Conveyance. Reduces GHG emissions related to the production of electricity used for water conveyance.

R2-W1 – Water Efficiency through Enhanced Implementation of Senate Bill X7-7. Supports public outreach by water districts and promotes water efficiency measures such as low-irrigation landscaping.

R2-W2 – Exceed Water Efficiency Standards. Support water districts in direct outreach to homeowner associations, businesses, and other community groups to inform them on water efficiency standards; Promote recycled or grey water for community uses such as residential landscaping; and Promote rainwater harvesting rebates and demonstrations.

The Project would not conflict with any of the Riverside County 2019 CAP Update measures, including the water measures shown above.

6.2.2 Significance of Impacts

The Project would not conflict with or obstruct implementation of the 2024 RTP/SCS and the Riverside County 2019 CAP Update. However, the use of natural gas ICE-powered water conveyance pumps could result in a conflict with the 2022 CARB Scoping plan. The impact would be potentially significant.

6.2.3 Mitigation Framework

As shown in Section 6.1, above, Project GHG emissions exceedance of the SCAQMD industrial threshold would be primarily due to stationary source emissions (the Project design option to use natural gas ICE-powered pumps in the BPS). Option 1 of MM-AQ-1, discussed in Section 6.1.2, requiring the use of electric pumps in the BPS, would eliminate stationary source fossil fuel related GHG emissions from natural gas ICE-powered pumps.

6.2.4 Significance After Mitigation

It is unknown at this point in the planning process whether it would be feasible to implement Option1 of MM-AQ-1, due to potential operational constraints such as the need to ensure uninterrupted service during emergencies that result in power outages. Therefore, the Project could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. The impact would be significant and unavoidable.

7.0 GENERAL CONFORMITY

This section evaluates potential adverse effects of the proposed Project as they relate to air pollutant emissions for the purposes of conformity with federal regulations. Project construction and operational emissions were estimated using the CalEEMod model as described in Sections 4.1 and 4.2.

As discussed in Section 4.3.3, the District may seek financing from the State Water Resources Control Board in which case the Project would require compliance not only with CEQA, but also with the federal CAA. The maximum Project annual construction or operational emissions of VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$ would occur during operation of the Project at 140 cfs pipeline transmissions capacity (required at buildout of the Perris Valley area) and are compared to the CAA federal *de minimis* levels in Table 37, *Unmitigated Maximum Annual Emissions General Conformity*.

Table 37
UNMITIGATED MAXIMUM ANNUAL EMISSIONS GENERAL CONFORMITY

Source	Emissions (tons per year)				
	VOC	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Project Operation at 140 cfs (2050)	6.0	175.9	679.0	1.9	1.8
De Minimis Level	*10*	*10*	*100*	*100*	*70*
Exceed De Minimis?	**No**	**Yes**	**Yes**	**No**	**No**

Source: CalEEMod Output (output data is provided in Appendix A)

As shown in Table 37, without mitigation, the Project would exceed the federal *de minimis* levels for NO_X, and CO.

Project maximum daily emissions of VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$ with implementation of mitigation Option 1 of MM-AQ-1 are compared to the CAA federal *de minimis* levels in Table 38, *Maximum Annual Emissions General* Conformity w*ith Mitigation Measure MM-AQ-1 Option 1 (Electric-Only Pumps)*.

Table 38
MAXIMUM ANNUAL EMISSIONS GENERAL CONFORMITY WITH MITIGATION MEASURE MM-AQ-1 OPTION 1 (ELECTRIC-ONLY PUMPS)

Source	Emissions (tons per year)				
	VOC	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Project Operation at 40 cfs (2030)	0.3	0.4	0.5	<0.1	<0.1
Concurrent Phase 2 Construction and Project Operation at 40 cfs (2033)	0.5	1.8	2.9	<0.1	<0.1
Concurrent Phase 3 Construction and Project Operation at 40 cfs (2038)	0.6	1.9	3.3	<0.1	<0.1
Project Operation at 80 cfs (2045)	0.4	0.8	0.7	<0.1	<0.1
Project Operation at 140 cfs (2050)	0.4	1.2	0.9	<0.1	<0.1
Maximum Annual Emissions	**0.4**	**0.6**	**1.8**	**<0.1**	**<0.1**
De Minimis Level	*10*	*10*	*100*	*100*	*70*
Exceed De Minimis?	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod Output (output data is provided in Appendix A)

As shown in Table 38, with implementation of mitigation Option 1 to require electric water conveyance pumps in the BPS, Project emissions would not exceed the CAA federal *de minimis* levels. However, it is

unknown at this point in the planning process whether it would be feasible to implement the mitigation options 1, due to potential operational constraints such as the need to ensure uninterrupted service during emergencies that result in power outages.

Project maximum daily emissions of VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$ with implementation of mitigation Option 2 of MM-AQ-1 are compared to the CAA federal *de minimis* levels in Table 39, *Maximum Annual Emissions General Conformity with Mitigation Measure MM-AQ-1 Option 2 (Combination of Electric and Natural Gas Pumps)*.

Table 39
MAXIMUM ANNUAL EMISSIONS GENERAL CONFORMITY WITH MITIGATION MEASURE MM-AQ-1 OPTION 2 (COMBINATION OF ELECTRIC AND NATURAL GAS PUMPS)

Source	Emissions (tons per year)				
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$
Project Operation at 40 cfs (2030)	1.9	7.9	201.5	<0.1	<0.1
Concurrent Phase 2 Construction and Project Operation at 40 cfs (2033)	2.1	9.3	203.9	<0.1	<0.1
Concurrent Phase 3 Construction and Project Operation at 40 cfs (2038)	2.2	9.4	204.3	<0.1	<0.1
Project Operation at 80 cfs (2045)	2.2	8.6	202.1	<0.1	<0.1
Project Operation at 140 cfs (2050)	2.4	9.1	202.2	<0.1	<0.1
Maximum Annual Emissions	**2.4**	**9.4**	**204.3**	**<0.1**	**<0.1**
De Minimis Level	*10*	*10*	*100*	*100*	*70*
Exceed De Minimis?	**No**	**No**	**Yes**	**No**	**No**

Source: CalEEMod Output (output data is provided in Appendix A)

As shown in Table 38, with implementation of mitigation Option 2 requiring a combination of natural gas ICE pumps and electric pumps in the BPS, Project emissions would exceed the CAA federal *de minimis* levels for CO. Therefore, the Project could result in an adverse effect under the CAA.

8.0 LIST OF PREPARERS

Victor Ortiz	Principal Air Quality Specialist
Martin Rolph	Senior Air Quality Specialist
Hunter Stapp	Assistant Project Manager
Joanne M. Dramko, AICP	Project Manager, Principal Technical Specialist, QA/QC

9.0 REFERENCES

Black & Veatch. 2021. EM-11 Transmission Pipeline Alignment & Pump Station Siting Study. May.

California Air Pollution Control Officers Association (CAPCOA). 2022. User's Guide for CalEEMod Version 2022.1. Available at: http://www.caleemod.com/.

California Air Resources Board (CARB). 2026a. iADAM Air Quality Data Statistics. Available at: https://www.arb.ca.gov/adam. Accessed January 12, 2026.

2026b. Current California GHG Emission Inventory Data. Available at: https://ww2.arb.ca.gov/ghg-inventory-data. Accessed January 12, 2026.

2025a. California Ambient Air Quality Standards. Available at: https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards. Accessed July 10, 2026.

2025b. Overview: Diesel Exhaust and Health. Available at: https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health. Accessed July 10, 2026.

2025c. State Implementation Plan Background. Available at: https://ww2.arb.ca.gov/our-work/programs/california-state-implementation-plans/about. Accessed July 10, 2026.

2025d. Clean Car Standards – Pavley, Assembly Bill 1493. Accessed December. Available at: http://www.arb.ca.gov/cc/ccms/ccms.htm. Accessed June 10, 2026.

2022a. 2022 Scoping Plan for Achieving Carbon Neutrality. November 16. Available at: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents.

2022b. 2022 Scoping Plan for Achieving Carbon Neutrality Appendix D, Local Action. November 16. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp-appendix-d-local-actions.pdf.

2016. Ambient Air Quality Standards. May 4. Available at: https://ww2.arb.ca.gov/sites/default/files/2020-03/aaqs2_0.pdf.

2007. California Greenhouse Gas Inventory – By Sector and Activity. November 19. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/ghg_inventory_sector_sum_90-04_AR4.pdf.

California Building Standards Commission (CBSC). 2022. CALGreen (CCR Title 24, Part 11). Available at: https://www.dgs.ca.gov/BSC/CALGreen.

California Energy Commission (CEC). 2025. 2025 Energy Code Summary. Available at: https://www.energy.ca.gov/sites/default/files/2024-12/2025_Energy_Code_Summary_ADA.pdf.

California Energy Commission (CEC) (cont.).2022. CCR Title 24 Part 6, 2022 Building Energy Efficiency Standards. Available at: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency.

Climate Watch. 2025. Historical GHG Emissions. Available at: https://www.climatewatchdata.org/ghg-emissions?source=CAIT. Accessed July 10, 2026.

Intergovernmental Panel on Climate Change (IPCC). 2024. IPCC Global Warming Potential Values Version 2.0, August 7. Available at: https://ghgprotocol.org/sites/default/files/2024-08/Global-Warming-Potential-Values%20%28August%202024%29.pdf.

2014. Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Available at: https://www.ipcc.ch/report/ar5/wg3/.

2013. Climate Change 2013: The Physical Science Basis. Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Available at: https://www.ipcc.ch/report/ar5/wg1/.

2007. Climate Change 2007: The Physical Science Basis. Summary for Policymakers. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. February. Available at: https://www.ipcc.ch/report/ar4/wg1/.

National Aeronautics and Space Administration, Goddard Institute for Space Studies (NASA). 2026. NASA Releases Global Temperature Data. January 14. Available at: https://www.nasa.gov/news-release/nasa-releases-global-temperature-data/.

National Oceanic and Atmospheric Administration (NOAA). 2026. Trends in Atmospheric Carbon Dioxide. Available at: https://www.esrl.noaa.gov/gmd/ccgg/trends. Accessed January 12, 2026.

National Highway Traffic Safety Administration. 2024. June 7, 2024: NHTSA Announces Final Rule for CAFE and HDPUV Standards. Available at: https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy.

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. February. Available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

Riverside, County of. 2019. County of Riverside Climate Action Plan Update. November. Available at: https://planning.rctlma.org/sites/g/files/aldnop416/files/migrated/Portals-14-CAP-2019-2019-CAP-Update-Full.pdf.

Southern California Association of Governments (SCAG). 2024. Connect SoCal, a Plan for Navigating to a Brighter Future. April 4. Available at: https://scag.ca.gov/connect-socal.

South Coast Air Quality Management District (SCAQMD). 2026. MATES V Multiple Air Toxics Exposure Study. Available at: https://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies/mates-v. Accessed January 12, 2026.

South Coast Air Quality Management District (SCAQMD) (cont.). 2022. 2022 Air Quality Management Plan. Adopted December 2. Available at: http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan.

2020. Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. Available at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

2019a. Rule 1110.2, Emissions from Gaseous- and Liquid Fueled Engines. Amended November 1. Available at: https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1110-2.pdf.

2019b. South Coast AQMD Air Quality Significance Thresholds. April. Available at: https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25.

2016a. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) Attainment Status for South Coast Air Basin. February. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf.

2010. Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group Meeting #15 (slide presentation). September 28.Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2.

2009. Mass Rate Localized Significance Thresholds Look-up Tables. October. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2.

2005a. Carbon Monoxide Redesignation Request and Maintenance Plan. February. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/planning/sip/sccosip05/sccosip_redesig_mplan.pdf.

2005b. Rule 403, Fugitive Dust. Amended June 3. Available at: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4.

2001. Rule 401, Visible emissions. Amended November 9. Available at: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-401.pdf?sfvrsn=4.

1976. Rule 402, Nuisance. Adopted May 7. Available at: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf?sfvrsn=4.

1993. *CEQA Air Quality Handbook*.

U.S. Environmental Protection Agency (USEPA). 2025a. Criteria Air Pollutants. Available at: https://www.epa.gov/criteria-air-pollutants. Accessed July 10, 2026.

U.S. Environmental Protection Agency (USEPA) (cont.). 2025b. Final Rule to Strengthen the National Air Quality Health Standard for Particulate Matter Fact Sheet. Available at: https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-overview.pdf. Accessed July 10, 2026.

2025c. Green Book 8-Hour Ozone (2015) Federal Register Notice Classification Changes. Available at: https://www3.epa.gov/airquality/greenbook/jfr2rpt2.html. Accessed July 10, 2026.

2025d. Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act. Available at: https://www.epa.gov/climate-change/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a. Accessed June 10, 2026.

2025e. General Conformity De Minimis Tables. Available at: https://www.epa.gov/general-conformity/de-minimis-tables. Accessed July 10, 2026.

2024. AP-42 Compilation of Air Pollutant Emissions Factors from Stationary Sources, Chapter 3.2 Natural Gas-fired Reciprocating Engines. October. Available at: https://www.epa.gov/system/files/documents/2024-10/c03s02_2024-update_0.pdf.

2012a. Benzene. Available at: https://www.epa.gov/sites/default/files/2016-09/documents/benzene.pdf.

2012b. Toluene. Available at: https://www.epa.gov/sites/default/files/2016-09/documents/toluene.pdf.

2009a. Acrolein. Available at: https://www.epa.gov/sites/default/files/2016-08/documents/acrolein.pdf.

2009b. 1,3-Butadiene. Available at: https://www.epa.gov/sites/default/files/2016-08/documents/13-butadiene.pdf.

2000a. Acetaldehyde. Available at: https://www.epa.gov/sites/default/files/2016-09/documents/acetaldehyde.pdf.

2000b. Ethylbenzene. Available at: https://www.epa.gov/sites/default/files/2016-09/documents/ethylbenzene.pdf.

2000c. Propionaldehyde. Available at: https://www.epa.gov/sites/default/files/2016-09/documents/propionaldehyde.pdf.

2000d. Xylenes. Available at: https://www.epa.gov/sites/default/files/2016-09/documents/xylenes.pdf.

Western Regional Climate Center (WRCC). 2016. Period of Record Monthly Climate Summary, Hemet, California (043896). Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3896.

Western Riverside Council of Governments. 2014. Subregional Climate Action Plan. Available at: http://content.mindmixer.com/Live/Projects/WRCOG/files/148765/WRCOG%20Subregional%20CAP_Final%20Draft_May%202014.pdf.

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Appendix A

CalEEMod Outputs

Lake Skinner WTS Phase 1 Construction Detailed Report

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1.1. Basic Project Information

Data Field	Value
Project Name	Lake Skinner WTS Phase 1 Construction
Construction Start Date	7/1/2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.58436861325653, -117.1195535504182
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6829
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Industrial Park	33.4	1000sqft	2.84	33,440	0.00	—	—	—
Other Asphalt Surfaces	51.4	1000sqft	1.18	0.00	0.00	—	—	—

Other Non-Asphalt Surfaces	8.70	Acre	8.70	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.67	33.5	45.2	0.10	1.25	3.93	5.16	1.15	1.60	2.74	11,922
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	23.5	22.2	32.0	0.07	0.72	0.66	1.38	0.67	0.16	0.82	8,556
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.72	7.74	10.7	0.02	0.27	0.50	0.77	0.25	0.18	0.43	2,851
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.31	1.41	1.95	< 0.005	0.05	0.09	0.14	0.05	0.03	0.08	472

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2028	4.67	33.5	45.2	0.10	1.25	3.93	5.16	1.15	1.60	2.74	11,922

2029	0.68	5.49	6.79	0.02	0.19	0.16	0.35	0.17	0.04	0.21	1,709
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
2028	3.13	22.2	32.0	0.07	0.72	0.66	1.38	0.67	0.16	0.82	8,556
2029	23.5	15.2	21.5	0.05	0.50	0.46	0.97	0.46	0.11	0.57	5,592
Average Daily	—	—	—	—	—	—	—	—	—	—	—
2028	1.07	7.74	10.7	0.02	0.27	0.50	0.77	0.25	0.18	0.43	2,851
2029	1.72	4.28	5.50	0.01	0.15	0.13	0.28	0.13	0.03	0.17	1,433
Annual	—	—	—	—	—	—	—	—	—	—	—
2028	0.20	1.41	1.95	< 0.005	0.05	0.09	0.14	0.05	0.03	0.08	472
2029	0.31	0.78	1.00	< 0.005	0.03	0.02	0.05	0.02	0.01	0.03	237

3. Construction Emissions Details

3.1. BPS Clear and Grub (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	4.16	6.78	0.02	0.13	—	0.13	0.12	—	0.12	1,921
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.11	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	52.6

Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	8.71
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	101
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.73	0.18	< 0.005	0.01	0.19	0.20	0.01	0.05	0.07	709
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	19.4
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.43
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.21

3.3. BPS Grading (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.02	15.4	18.2	0.04	0.69	—	0.69	0.64	—	0.64	4,006
Dust From Material Movement	—	—	—	—	—	2.97	2.97	—	1.36	1.36	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	1.43	1.69	< 0.005	0.06	—	0.06	0.06	—	0.06	373
Dust From Material Movement	—	—	—	—	—	0.28	0.28	—	0.13	0.13	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.26	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	61.8
Dust From Material Movement	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.77	0.00	0.00	0.16	0.16	0.00	0.04	0.04	168
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.62	0.15	< 0.005	0.01	0.16	0.17	0.01	0.04	0.06	601
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	14.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	56.0
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.42
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.27

3.5. BPS Structure Construction (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	7.38	9.98	0.03	0.28	—	0.28	0.25	—	0.25	2,930
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.45	0.61	< 0.005	0.02	—	0.02	0.02	—	0.02	178
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	29.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.66	0.00	0.00	0.18	0.18	0.00	0.04	0.04	174
Vendor	< 0.005	0.17	0.05	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	166
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.7
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	10.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.77
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.67
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. BPS Structure Construction (2029) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	6.93	9.91	0.03	0.25	—	0.25	0.23	—	0.23	2,930
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.80	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	338

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.15	0.21	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	56.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.05	0.61	0.00	0.00	0.18	0.18	0.00	0.04	0.04	171
Vendor	< 0.005	0.16	0.05	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	161
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	20.0
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	18.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.31
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.08
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. BPS Paving (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.34	3.31	4.95	0.01	0.13	—	0.13	0.12	—	0.12	758
Paving	0.31	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	20.8
Paving	0.01	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.44
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.35	0.00	0.00	0.10	0.10	0.00	0.02	0.02	92.7
Vendor	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	121
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.58
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.32
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.43
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.55
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2029) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	1.73	3.03	< 0.005	0.04	—	0.04	0.03	—	0.03	425
Architectural Coatings	21.5	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	23.3
Architectural Coatings	1.18	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.86
Architectural Coatings	0.21	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.00	0.04	0.04	0.00	0.01	0.01	34.1

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.90
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.31
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Turnout Vault Excavation (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.81	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	142
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	8.18
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.35
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	33.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.67	0.17	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	649
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	37.3
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.30
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	6.18

3.15. Turnout Utility Installation (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	1.76	2.93	< 0.005	0.05	—	0.05	0.04	—	0.04	434
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.11	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	27.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.52
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.31	0.00	0.00	0.07	0.07	0.00	0.02	0.02	67.3
Vendor	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	121
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.95
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	7.63
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.65
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.26
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Turnout Vault Structures (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.60	5.36	7.02	0.01	0.19	—	0.19	0.18	—	0.18	1,581
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.60	5.36	7.02	0.01	0.19	—	0.19	0.18	—	0.18	1,581
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.95	1.25	< 0.005	0.03	—	0.03	0.03	—	0.03	281
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.17	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	46.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.62	0.00	0.00	0.13	0.13	0.00	0.03	0.03	135
Vendor	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	121
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.47	0.00	0.00	0.13	0.13	0.00	0.03	0.03	124

Vendor	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	121
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	0.01	0.01	22.3
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	21.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.70
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.57
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Turnout Equipment Installation (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.75	6.41	7.24	0.02	0.22	—	0.22	0.20	—	0.20	1,602
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.39	0.44	< 0.005	0.01	—	0.01	0.01	—	0.01	97.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	16.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.59	0.00	0.00	0.16	0.16	0.00	0.04	0.04	155
Vendor	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	121
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	9.51
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	7.34
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.57
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.22
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Turnout Equipment Installation (2029) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	6.14	7.19	0.02	0.21	—	0.21	0.19	—	0.19	1,602
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.08	0.71	0.83	< 0.005	0.02	—	0.02	0.02	—	0.02	185
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.13	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	30.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.54	0.00	0.00	0.16	0.16	0.00	0.04	0.04	152
Vendor	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	118
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	17.8
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	13.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.94
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.23. BPS Excavation (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.18	1.76	2.93	< 0.005	0.05	—	0.05	0.04	—	0.04	434
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.10	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	24.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.13
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.31	0.00	0.00	0.07	0.07	0.00	0.02	0.02	67.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.61
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.60
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.25. BPS Utility Installation (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.96	1.92	< 0.005	0.03	—	0.03	0.02	—	0.02	291
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	17.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.91
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	30.9
Vendor	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	121
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.89
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	7.29

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.31
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.21
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.27. BPS Site Improvements (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.28	2.39	3.93	0.01	0.08	—	0.08	0.07	—	0.07	586
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	19.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.19
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.35	0.00	0.00	0.10	0.10	0.00	0.02	0.02	92.7

Vendor	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	121
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.09
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.98
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.51
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.66
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.29. BPS Equipment Installation (2029) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	5.34	6.17	0.01	0.19	—	0.19	0.17	—	0.17	1,459
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	5.34	6.17	0.01	0.19	—	0.19	0.17	—	0.17	1,459
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	2.56	2.96	0.01	0.09	—	0.09	0.08	—	0.08	700
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.06	0.47	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	116
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.58	0.00	0.00	0.13	0.13	0.00	0.03	0.03	132
Vendor	< 0.005	0.11	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	118
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.43	0.00	0.00	0.13	0.13	0.00	0.03	0.03	121
Vendor	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	118
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.02	0.22	0.00	0.00	0.06	0.06	0.00	0.01	0.01	59.0
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	56.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	9.78
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.34
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.31. Pipe Slipline (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	2.27	15.3	20.9	0.05	0.50	—	0.50	0.46	—	0.46	5,796
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.27	15.3	20.9	0.05	0.50	—	0.50	0.46	—	0.46	5,796
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.54	3.65	4.99	0.01	0.12	—	0.12	0.11	—	0.11	1,381
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.67	0.91	< 0.005	0.02	—	0.02	0.02	—	0.02	229
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	1.86	0.00	0.00	0.39	0.39	0.00	0.09	0.09	404
Vendor	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	121
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.12	1.40	0.00	0.00	0.39	0.39	0.00	0.09	0.09	371
Vendor	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	121
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.35	0.00	0.00	0.09	0.09	0.00	0.02	0.02	89.6
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	28.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	0.01	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	14.8
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	4.78
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
BPS Clear and Grub	Site Preparation	7/1/2028	7/15/2028	5.00	10.0	—
BPS Grading	Grading	7/16/2028	8/31/2028	5.00	34.0	—
BPS Structure Construction	Building Construction	12/1/2028	2/28/2029	5.00	64.0	—
BPS Paving	Paving	11/1/2028	11/14/2028	5.00	10.0	—
Architectural Coating	Architectural Coating	2/1/2029	2/28/2029	5.00	20.0	—
Turnout Vault Excavation	Trenching	7/1/2028	7/31/2028	5.00	21.0	—
Turnout Utility Installation	Trenching	8/1/2028	8/31/2028	5.00	23.0	—
Turnout Vault Structures	Trenching	9/1/2028	11/30/2028	5.00	65.0	—
Turnout Equipment Installation	Trenching	12/1/2028	2/28/2029	5.00	64.0	—
BPS Excavation	Trenching	9/1/2028	9/30/2028	5.00	21.0	—
BPS Utility Installation	Trenching	10/1/2028	10/31/2028	5.00	22.0	—
BPS Site Improvements	Trenching	11/15/2028	11/30/2028	5.00	12.0	—
BPS Equipment Installation	Trenching	3/1/2029	10/31/2029	5.00	175	—
Pipe Slipline	Trenching	7/1/2028	10/31/2028	5.00	87.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
BPS Clear and Grub	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
BPS Clear and Grub	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
BPS Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
BPS Grading	Graders	Diesel	Average	2.00	8.00	148	0.41
BPS Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
BPS Grading	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
BPS Structure Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
BPS Structure Construction	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
BPS Structure Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
BPS Structure Construction	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
BPS Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
BPS Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
BPS Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Architectural Coating	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Turnout Vault Excavation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Turnout Utility Installation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Turnout Utility Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Turnout Vault Structures	Cranes	Diesel	Average	1.00	8.00	367	0.29
Turnout Vault Structures	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

Turnout Vault Structures	Tractors/Loaders/Back	Diesel	Average	1.00	8.00	84.0	0.37
Turnout Vault Structures	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Turnout Equipment Installation	Cranes	Diesel	Average	1.00	8.00	367	0.29
Turnout Equipment Installation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Turnout Equipment Installation	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Turnout Equipment Installation	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Turnout Equipment Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
BPS Excavation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
BPS Excavation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
BPS Utility Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
BPS Site Improvements	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
BPS Site Improvements	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
BPS Site Improvements	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
BPS Equipment Installation	Cranes	Diesel	Average	1.00	8.00	367	0.29
BPS Equipment Installation	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
BPS Equipment Installation	Welders	Diesel	Average	1.00	8.00	46.0	0.45
BPS Equipment Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Pipe Slipline	Excavators	Diesel	Average	3.00	8.00	36.0	0.38

Pipe Slipline	Tractors/Loaders/Back	Diesel	Average	2.00	8.00	84.0	0.37
Pipe Slipline	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Pipe Slipline	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Pipe Slipline	Off-Highway Trucks	Diesel	Average	3.00	8.00	376	0.38
Pipe Slipline	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Pipe Slipline	Rollers	Diesel	Average	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
BPS Clear and Grub	—	—	—	—
BPS Clear and Grub	Worker	7.50	18.5	LDA,LDT1,LDT2
BPS Clear and Grub	Vendor	—	10.2	HHDT,MHDT
BPS Clear and Grub	Hauling	10.4	20.0	HHDT
BPS Clear and Grub	Onsite truck	—	—	HHDT
BPS Grading	—	—	—	—
BPS Grading	Worker	12.5	18.5	LDA,LDT1,LDT2
BPS Grading	Vendor	—	10.2	HHDT,MHDT
BPS Grading	Hauling	8.82	20.0	HHDT
BPS Grading	Onsite truck	—	—	HHDT
BPS Structure Construction	—	—	—	—
BPS Structure Construction	Worker	14.0	18.5	LDA,LDT1,LDT2
BPS Structure Construction	Vendor	5.48	10.2	HHDT,MHDT
BPS Structure Construction	Hauling	0.00	20.0	HHDT
BPS Structure Construction	Onsite truck	—	—	HHDT
BPS Paving	—	—	—	—
BPS Paving	Worker	7.50	18.5	LDA,LDT1,LDT2

BPS Paving	Vendor	4.00	10.2	HHDT,MHDT
BPS Paving	Hauling	0.00	20.0	HHDT
BPS Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.81	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Turnout Vault Excavation	—	—	—	—
Turnout Vault Excavation	Worker	2.50	18.5	LDA,LDT1,LDT2
Turnout Vault Excavation	Vendor	—	10.2	HHDT,MHDT
Turnout Vault Excavation	Hauling	9.52	20.0	HHDT
Turnout Vault Excavation	Onsite truck	—	—	HHDT
Turnout Utility Installation	—	—	—	—
Turnout Utility Installation	Worker	5.00	18.5	LDA,LDT1,LDT2
Turnout Utility Installation	Vendor	4.00	10.2	HHDT,MHDT
Turnout Utility Installation	Hauling	0.00	20.0	HHDT
Turnout Utility Installation	Onsite truck	—	—	HHDT
Turnout Vault Structures	—	—	—	—
Turnout Vault Structures	Worker	10.0	18.5	LDA,LDT1,LDT2
Turnout Vault Structures	Vendor	4.00	10.2	HHDT,MHDT
Turnout Vault Structures	Hauling	0.00	20.0	HHDT
Turnout Vault Structures	Onsite truck	—	—	HHDT
Turnout Equipment Installation	—	—	—	—
Turnout Equipment Installation	Worker	12.5	18.5	LDA,LDT1,LDT2
Turnout Equipment Installation	Vendor	4.00	10.2	HHDT,MHDT
Turnout Equipment Installation	Hauling	0.00	20.0	HHDT
Turnout Equipment Installation	Onsite truck	—	—	HHDT

BPS Excavation	—	—	—	—
BPS Excavation	Worker	5.00	18.5	LDA,LDT1,LDT2
BPS Excavation	Vendor	—	10.2	HHDT,MHDT
BPS Excavation	Hauling	0.00	20.0	HHDT
BPS Excavation	Onsite truck	—	—	HHDT
BPS Utility Installation	—	—	—	—
BPS Utility Installation	Worker	2.50	18.5	LDA,LDT1,LDT2
BPS Utility Installation	Vendor	4.00	10.2	HHDT,MHDT
BPS Utility Installation	Hauling	0.00	20.0	HHDT
BPS Utility Installation	Onsite truck	—	—	HHDT
BPS Site Improvements	—	—	—	—
BPS Site Improvements	Worker	7.50	18.5	LDA,LDT1,LDT2
BPS Site Improvements	Vendor	4.00	10.2	HHDT,MHDT
BPS Site Improvements	Hauling	0.00	20.0	HHDT
BPS Site Improvements	Onsite truck	—	—	HHDT
BPS Equipment Installation	—	—	—	—
BPS Equipment Installation	Worker	10.0	18.5	LDA,LDT1,LDT2
BPS Equipment Installation	Vendor	4.00	10.2	HHDT,MHDT
BPS Equipment Installation	Hauling	0.00	20.0	HHDT
BPS Equipment Installation	Onsite truck	—	—	HHDT
Pipe Slipline	—	—	—	—
Pipe Slipline	Worker	30.0	18.5	LDA,LDT1,LDT2
Pipe Slipline	Vendor	4.00	10.2	HHDT,MHDT
Pipe Slipline	Hauling	0.00	20.0	HHDT
Pipe Slipline	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	50,160	16,720	25,822

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
BPS Clear and Grub	—	830	0.00	0.00	—
BPS Grading	—	2,400	51.0	0.00	—
BPS Paving	0.00	0.00	0.00	0.00	9.88
Turnout Vault Excavation	—	1,600	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Industrial Park	0.00	0%
Other Asphalt Surfaces	1.18	100%
Other Non-Asphalt Surfaces	8.70	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2028	0.00	346	0.03	< 0.005
2029	0.00	346	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.7	annual days of extreme heat
Extreme Precipitation	3.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	25.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	78.0
AQ-PM	38.2
AQ-DPM	23.4
Drinking Water	10.2
Lead Risk Housing	1.84

Pesticides	0.00
Toxic Releases	12.5
Traffic	13.0
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	10.6
Haz Waste Facilities/Generators	67.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	41.3
Cardio-vascular	92.4
Low Birth Weights	47.4
Socioeconomic Factor Indicators	—
Education	38.5
Housing	9.53
Linguistic	32.0
Poverty	10.1
Unemployment	66.6

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.08558963
Employed	29.83446683
Median HI	77.19748492
Education	—

Bachelor's or higher	40.56204286
High school enrollment	100
Preschool enrollment	58.48838701
Transportation	—
Auto Access	82.44578468
Active commuting	4.568202233
Social	—
2-parent households	81.49621455
Voting	50.73784165
Neighborhood	—
Alcohol availability	97.0101373
Park access	7.160272039
Retail density	13.80726293
Supermarket access	11.22802515
Tree canopy	4.606698319
Housing	—
Homeownership	93.26318491
Housing habitability	92.2751187
Low-inc homeowner severe housing cost burden	92.00564609
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	88.2586937
Health Outcomes	—
Insured adults	87.86090081
Arthritis	0.0
Asthma ER Admissions	86.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0

Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.2
Cognitively Disabled	62.4
Physically Disabled	34.8
Heart Attack ER Admissions	2.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	16.2
SLR Inundation Area	0.0
Children	18.1
Elderly	81.9
English Speaking	61.0
Foreign-born	27.9
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	61.7
Traffic Density	23.3

Traffic Access	23.0
Other Indices	—
Hardship	34.5
Other Decision Support	—
2016 Voting	60.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Industrial building = booster pump station. Other Non-Asphalt Surface = Phase 1 pipeline.
Construction: Construction Phases	Construction schedule per project engineer/team. Architectural coating for BPS building assumed to occur concurrently with the last month of structure construction.

Construction: Dust From Material Movement	Material export estimated from project plans.
Construction: Off-Road Equipment	Equipment per project engineer/team. Off-Highway Trucks = dump trucks (used on-site to stockpile soil), concrete pump trucks, and water trucks.
Operations: Vehicle Data	Up to 8 on-way trips per day assumed between the BPS facility and the District office on Trumble Road in Perris (17 mile one-way trip distance).
Operations: Energy Use	Project BPS building would include HVAC and lighting, accounted for by default Title 24 electricity and natural gas use. Electricity use for four 800 HP pumps operating 7,008 hours per year each (12,551,255 kWh) is accounted for in the Not Subject to Title 24 electricity use.
Operations: Emergency Generators and Fire Pumps	1 MW CNG emergency backup generator operated 15 minutes once a month for testing/maintenance.

Lake Skinner WTS Phase 2 Construction Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lake Skinner WTS Phase 2 Construction
Construction Start Date	7/1/2034
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.58436861325653, -117.1195535504182
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6829
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	8.70	Acre	11.6	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.13	13.1	22.0	0.06	0.36	0.43	0.79	0.33	0.10	0.43	6,271
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.13	13.1	21.7	0.06	0.36	0.43	0.79	0.33	0.10	0.43	6,241
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.24	7.58	12.9	0.03	0.20	0.25	0.45	0.18	0.06	0.24	3,711
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.23	1.38	2.35	0.01	0.04	0.05	0.08	0.03	0.01	0.04	614

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2033	2.13	13.1	22.0	0.06	0.36	0.43	0.79	0.33	0.10	0.43	6,271
2034	2.09	12.7	21.9	0.06	0.34	0.43	0.76	0.31	0.10	0.41	6,263
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

2033	2.13	13.1	21.7	0.06	0.36	0.43	0.79	0.33	0.10	0.43	6,241
2034	2.09	12.7	21.6	0.06	0.34	0.43	0.76	0.31	0.10	0.41	6,234
Average Daily	—	—	—	—	—	—	—	—	—	—	—
2033	0.77	4.71	7.82	0.02	0.13	0.15	0.28	0.12	0.04	0.16	2,249
2034	1.24	7.58	12.9	0.03	0.20	0.25	0.45	0.18	0.06	0.24	3,711
Annual	—	—	—	—	—	—	—	—	—	—	—
2033	0.14	0.86	1.43	< 0.005	0.02	0.03	0.05	0.02	0.01	0.03	372
2034	0.23	1.38	2.35	0.01	0.04	0.05	0.08	0.03	0.01	0.04	614

3. Construction Emissions Details

3.1. Pipe Slipline (2033) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.05	12.9	20.6	0.05	0.36	—	0.36	0.33	—	0.33	5,797
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.05	12.9	20.6	0.05	0.36	—	0.36	0.33	—	0.33	5,797
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	4.65	7.42	0.02	0.13	—	0.13	0.12	—	0.12	2,087
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.13	0.85	1.35	< 0.005	0.02	—	0.02	0.02	—	0.02	346
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.06	1.34	0.00	0.00	0.39	0.39	0.00	0.09	0.09	370
Vendor	< 0.005	0.10	0.03	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	104
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.06	1.01	0.00	0.00	0.39	0.39	0.00	0.09	0.09	340
Vendor	< 0.005	0.10	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	104
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.38	0.00	0.00	0.14	0.14	0.00	0.03	0.03	124
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	37.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.07	0.00	0.00	0.03	0.03	0.00	0.01	0.01	20.6
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	6.17
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Pipe Slipline (2034) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	2.02	12.6	20.6	0.05	0.34	—	0.34	0.31	—	0.31	5,797
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.02	12.6	20.6	0.05	0.34	—	0.34	0.31	—	0.31	5,797
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	7.48	12.2	0.03	0.20	—	0.20	0.18	—	0.18	3,449
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	1.37	2.23	0.01	0.04	—	0.04	0.03	—	0.03	571
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.05	1.26	0.00	0.00	0.39	0.39	0.00	0.09	0.09	366
Vendor	< 0.005	0.09	0.03	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	100
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.95	0.00	0.00	0.39	0.39	0.00	0.09	0.09	336
Vendor	< 0.005	0.10	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	100
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.60	0.00	0.00	0.23	0.23	0.00	0.05	0.05	203
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	59.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.11	0.00	0.00	0.04	0.04	0.00	0.01	0.01	33.5
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.87
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Pipe Slipline	Trenching	7/1/2033	10/31/2034	5.00	348	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Pipe Slipline	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Pipe Slipline	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Pipe Slipline	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Pipe Slipline	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Pipe Slipline	Off-Highway Trucks	Diesel	Average	3.00	8.00	376	0.38
Pipe Slipline	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Pipe Slipline	Rollers	Diesel	Average	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Pipe Slipline	—	—	—	—

Pipe Slipline	Worker	30.0	18.5	LDA,LDT1,LDT2
Pipe Slipline	Vendor	4.00	10.2	HHDT,MHDT
Pipe Slipline	Hauling	0.00	20.0	HHDT
Pipe Slipline	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	11.6	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2033	0.00	261	0.03	< 0.005
2034	0.00	261	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.7	annual days of extreme heat

Extreme Precipitation	3.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	25.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score

Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	78.0
AQ-PM	38.2
AQ-DPM	23.4
Drinking Water	10.2
Lead Risk Housing	1.84
Pesticides	0.00
Toxic Releases	12.5
Traffic	13.0

Effect Indicators	—
CleanUp Sites	58.2
Groundwater	10.6
Haz Waste Facilities/Generators	67.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	41.3
Cardio-vascular	92.4
Low Birth Weights	47.4
Socioeconomic Factor Indicators	—
Education	38.5
Housing	9.53
Linguistic	32.0
Poverty	10.1
Unemployment	66.6

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.08558963
Employed	29.83446683
Median HI	77.19748492
Education	—
Bachelor's or higher	40.56204286
High school enrollment	100
Preschool enrollment	58.48838701

Transportation	—
Auto Access	82.44578468
Active commuting	4.568202233
Social	—
2-parent households	81.49621455
Voting	50.73784165
Neighborhood	—
Alcohol availability	97.0101373
Park access	7.160272039
Retail density	13.80726293
Supermarket access	11.22802515
Tree canopy	4.606698319
Housing	—
Homeownership	93.26318491
Housing habitability	92.2751187
Low-inc homeowner severe housing cost burden	92.00564609
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	88.2586937
Health Outcomes	—
Insured adults	87.86090081
Arthritis	0.0
Asthma ER Admissions	86.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0

Life Expectancy at Birth	54.2
Cognitively Disabled	62.4
Physically Disabled	34.8
Heart Attack ER Admissions	2.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	16.2
SLR Inundation Area	0.0
Children	18.1
Elderly	81.9
English Speaking	61.0
Foreign-born	27.9
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	61.7
Traffic Density	23.3
Traffic Access	23.0
Other Indices	—
Hardship	34.5

Other Decision Support	—
2016 Voting	60.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Other Non-Asphalt Surface = Phase 2 pipeline.
Construction: Construction Phases	Construction schedule per project engineer/team.
Construction: Dust From Material Movement	Material export estimated from project plans.
Construction: Off-Road Equipment	Equipment per project engineer/team. Off-Highway Trucks = dump trucks (used on-site to stockpile soil), concrete pump trucks, and water trucks.

Operations: Vehicle Data	Up to 8 on-way trips per day assumed between the BPS facility and the District office on Trumble Road in Perris (17 mile one-way trip distance).
Operations: Energy Use	Project BPS building would include HVAC and lighting, accounted for by default Title 24 electricity and natural gas use. Natural gas use for pumps accounted for in Stationary Sources.
Operations: Emergency Generators and Fire Pumps	—

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lake Skinner WTS Phase 3 Construction
Construction Start Date	7/1/2038
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.58436861325653, -117.1195535504182
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6829
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	8.70	Acre	9.50	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.44	20.3	37.4	0.10	0.51	0.69	1.20	0.47	0.16	0.63	10,849
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.03	17.3	32.2	0.08	0.43	0.62	1.05	0.40	0.15	0.54	9,451
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.39	7.98	15.2	0.04	0.20	0.29	0.48	0.18	0.07	0.25	4,443
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	1.46	2.78	0.01	0.04	0.05	0.09	0.03	0.01	0.05	736

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2038	3.44	20.3	37.4	0.10	0.51	0.69	1.20	0.47	0.16	0.63	10,849
2039	2.35	13.4	25.8	0.07	0.33	0.49	0.82	0.30	0.11	0.42	7,498
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

2038	3.03	17.3	32.2	0.08	0.43	0.62	1.05	0.40	0.15	0.54	9,451
2039	2.34	13.4	25.5	0.07	0.33	0.49	0.82	0.30	0.11	0.42	7,464
Average Daily	—	—	—	—	—	—	—	—	—	—	—
2038	1.04	6.17	11.4	0.03	0.15	0.21	0.37	0.14	0.05	0.19	3,267
2039	1.39	7.98	15.2	0.04	0.20	0.29	0.48	0.18	0.07	0.25	4,443
Annual	—	—	—	—	—	—	—	—	—	—	—
2038	0.19	1.13	2.08	0.01	0.03	0.04	0.07	0.03	0.01	0.03	541
2039	0.25	1.46	2.78	0.01	0.04	0.05	0.09	0.03	0.01	0.05	736

3. Construction Emissions Details

3.1. Trenching (2038) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.30	13.7	24.7	0.07	0.34	—	0.34	0.31	—	0.31	7,062
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.30	13.7	24.7	0.07	0.34	—	0.34	0.31	—	0.31	7,062
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.83	4.94	8.88	0.02	0.12	—	0.12	0.11	—	0.11	2,543
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.15	0.90	1.62	< 0.005	0.02	—	0.02	0.02	—	0.02	421
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.05	1.33	0.00	0.00	0.49	0.49	0.00	0.11	0.11	440
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.06	1.00	0.00	0.00	0.49	0.49	0.00	0.11	0.11	405
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.38	0.00	0.00	0.17	0.17	0.00	0.04	0.04	148
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.07	0.00	0.00	0.03	0.03	0.00	0.01	0.01	24.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Trenching (2039) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	2.28	13.4	24.6	0.07	0.33	—	0.33	0.30	—	0.30	7,062
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.28	13.4	24.6	0.07	0.33	—	0.33	0.30	—	0.30	7,062
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	7.95	14.6	0.04	0.20	—	0.20	0.18	—	0.18	4,201
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	1.45	2.67	0.01	0.04	—	0.04	0.03	—	0.03	696
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.04	1.28	0.00	0.00	0.49	0.49	0.00	0.11	0.11	436
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.96	0.00	0.00	0.49	0.49	0.00	0.11	0.11	402
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.60	0.00	0.00	0.29	0.29	0.00	0.07	0.07	242
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.11	0.00	0.00	0.05	0.05	0.00	0.01	0.01	40.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Trenchless Pit Excavation (2038) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	1.57	2.91	< 0.005	0.02	—	0.02	0.01	—	0.01	433
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	26.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.33
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.18	0.00	0.00	0.07	0.07	0.00	0.02	0.02	58.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.29
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Trenchless Pipe Intallation (2038) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	6.55	10.9	0.03	0.17	—	0.17	0.16	—	0.16	3,172
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.79	1.32	< 0.005	0.02	—	0.02	0.02	—	0.02	382
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.14	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	63.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.53	0.00	0.00	0.20	0.20	0.00	0.05	0.05	176
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.02	0.02	0.00	0.01	0.01	19.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.27
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Trenchless Pit Backfill (2038) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	3.54	6.28	0.02	0.09	—	0.09	0.08	—	0.08	1,877
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.20	0.36	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	108
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.04	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	17.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.27	0.00	0.00	0.13	0.13	0.00	0.03	0.03	108
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	6.29
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Trenchless Pavement Repair (2038) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	1.79	2.97	< 0.005	0.04	—	0.04	0.03	—	0.03	459
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.11	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	27.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.58
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.07	0.07	0.00	0.02	0.02	53.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.29
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Trenching	Trenching	7/1/2038	10/31/2039	5.00	348	—
Trenchless Pit Excavation	Trenching	7/1/2038	7/31/2038	5.00	22.0	—
Trenchless Pipe Intallation	Trenching	8/1/2038	9/30/2038	5.00	44.0	—
Trenchless Pit Backfill	Trenching	10/1/2038	10/31/2038	5.00	21.0	—
Trenchless Pavement Repair	Trenching	11/1/2038	11/30/2038	5.00	22.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Trenching	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Trenching	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Trenching	Cranes	Diesel	Average	1.00	8.00	367	0.29
Trenching	Generator Sets	Diesel	Average	2.00	8.00	14.0	0.74
Trenching	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Trenching	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Trenching	Rollers	Diesel	Average	1.00	1.00	36.0	0.38
Trenching	Off-Highway Trucks	Diesel	Average	3.00	8.00	376	0.38
Trenchless Pit Excavation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Trenchless Pit Excavation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37

Trenchless Pipe Intallation	Cranes	Diesel	Average	1.00	8.00	367	0.29
Trenchless Pipe Intallation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Trenchless Pipe Intallation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Trenchless Pipe Intallation	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Trenchless Pipe Intallation	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Trenchless Pipe Intallation	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Trenchless Pit Backfill	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Trenchless Pit Backfill	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Trenchless Pit Backfill	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Trenchless Pit Backfill	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Trenchless Pavement Repair	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Trenchless Pavement Repair	Rollers	Diesel	Average	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Trenching	—	—	—	—
Trenching	Worker	37.5	18.5	LDA,LDT1,LDT2
Trenching	Vendor	—	10.2	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT
Trenchless Pit Excavation	—	—	—	—

Trenchless Pit Excavation	Worker	5.00	18.5	LDA,LDT1,LDT2
Trenchless Pit Excavation	Vendor	—	10.2	HHDT,MHDT
Trenchless Pit Excavation	Hauling	0.00	20.0	HHDT
Trenchless Pit Excavation	Onsite truck	—	—	HHDT
Trenchless Pipe Intallation	—	—	—	—
Trenchless Pipe Intallation	Worker	15.0	18.5	LDA,LDT1,LDT2
Trenchless Pipe Intallation	Vendor	—	10.2	HHDT,MHDT
Trenchless Pipe Intallation	Hauling	0.00	20.0	HHDT
Trenchless Pipe Intallation	Onsite truck	—	—	HHDT
Trenchless Pit Backfill	—	—	—	—
Trenchless Pit Backfill	Worker	10.0	18.5	LDA,LDT1,LDT2
Trenchless Pit Backfill	Vendor	—	10.2	HHDT,MHDT
Trenchless Pit Backfill	Hauling	0.00	20.0	HHDT
Trenchless Pit Backfill	Onsite truck	—	—	HHDT
Trenchless Pavement Repair	—	—	—	—
Trenchless Pavement Repair	Worker	5.00	18.5	LDA,LDT1,LDT2
Trenchless Pavement Repair	Vendor	—	10.2	HHDT,MHDT
Trenchless Pavement Repair	Hauling	0.00	20.0	HHDT
Trenchless Pavement Repair	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	9.50	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2038	0.00	261	0.03	< 0.005
2039	0.00	261	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.7	annual days of extreme heat
Extreme Precipitation	3.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	25.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	78.0
AQ-PM	38.2
AQ-DPM	23.4
Drinking Water	10.2
Lead Risk Housing	1.84
Pesticides	0.00
Toxic Releases	12.5
Traffic	13.0
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	10.6
Haz Waste Facilities/Generators	67.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	41.3
Cardio-vascular	92.4
Low Birth Weights	47.4
Socioeconomic Factor Indicators	—

Education	38.5
Housing	9.53
Linguistic	32.0
Poverty	10.1
Unemployment	66.6

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.08558963
Employed	29.83446683
Median HI	77.19748492
Education	—
Bachelor's or higher	40.56204286
High school enrollment	100
Preschool enrollment	58.48838701
Transportation	—
Auto Access	82.44578468
Active commuting	4.568202233
Social	—
2-parent households	81.49621455
Voting	50.73784165
Neighborhood	—
Alcohol availability	97.0101373
Park access	7.160272039
Retail density	13.80726293
Supermarket access	11.22802515

Tree canopy	4.606698319
Housing	—
Homeownership	93.26318491
Housing habitability	92.2751187
Low-inc homeowner severe housing cost burden	92.00564609
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	88.2586937
Health Outcomes	—
Insured adults	87.86090081
Arthritis	0.0
Asthma ER Admissions	86.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.2
Cognitively Disabled	62.4
Physically Disabled	34.8
Heart Attack ER Admissions	2.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—

Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	16.2
SLR Inundation Area	0.0
Children	18.1
Elderly	81.9
English Speaking	61.0
Foreign-born	27.9
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	61.7
Traffic Density	23.3
Traffic Access	23.0
Other Indices	—
Hardship	34.5
Other Decision Support	—
2016 Voting	60.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Other Non-Asphalt Surface = Phase 3 pipeline.
Construction: Construction Phases	Construction schedule per project engineer/team.
Construction: Dust From Material Movement	Material export estimated from project plans.
Construction: Off-Road Equipment	Equipment per project engineer/team. Off-Highway Trucks = dump trucks (used on-site to stockpile soil) and water trucks.
Operations: Vehicle Data	Up to 8 on-way trips per day assumed between the BPS facility and the District office on Trumble Road in Perris (17 mile one-way trip distance).
Operations: Energy Use	Project BPS building would include HVAC and lighting, accounted for by default Title 24 electricity and natural gas use. Natural gas use for pumps accounted for in Stationary Sources.
Operations: Emergency Generators and Fire Pumps	—

Lake Skinner WTS Phase 4 Construction Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lake Skinner WTS Phase 4 Construction
Construction Start Date	7/1/2042
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.58436861325653, -117.1195535504182
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6829
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	8.70	Acre	29.1	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.62	37.9	73.7	0.19	0.92	1.37	2.29	0.84	0.32	1.16	21,670
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.85	32.2	63.7	0.17	0.77	1.24	2.02	0.71	0.29	1.00	18,879
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.70	15.0	30.1	0.08	0.34	0.58	0.92	0.32	0.13	0.45	8,877
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.49	2.74	5.49	0.01	0.06	0.11	0.17	0.06	0.02	0.08	1,470

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2042	6.62	37.9	73.7	0.19	0.92	1.37	2.29	0.84	0.32	1.16	21,670
2043	4.55	25.2	51.1	0.13	0.58	0.98	1.56	0.53	0.23	0.76	14,979
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

2042	5.85	32.2	63.7	0.17	0.77	1.24	2.02	0.71	0.29	1.00	18,879
2043	4.55	25.2	50.5	0.13	0.58	0.98	1.56	0.53	0.23	0.76	14,911
Average Daily	—	—	—	—	—	—	—	—	—	—	—
2042	2.01	11.5	22.4	0.06	0.27	0.43	0.70	0.25	0.10	0.35	6,527
2043	2.70	15.0	30.1	0.08	0.34	0.58	0.92	0.32	0.13	0.45	8,877
Annual	—	—	—	—	—	—	—	—	—	—	—
2042	0.37	2.09	4.10	0.01	0.05	0.08	0.13	0.05	0.02	0.06	1,081
2043	0.49	2.74	5.49	0.01	0.06	0.11	0.17	0.06	0.02	0.08	1,470

3. Construction Emissions Details

3.1. Trenching (2042) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.47	25.5	48.9	0.13	0.61	—	0.61	0.56	—	0.56	14,124
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.47	25.5	48.9	0.13	0.61	—	0.61	0.56	—	0.56	14,124
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.61	9.19	17.6	0.05	0.22	—	0.22	0.20	—	0.20	5,086
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.29	1.68	3.21	0.01	0.04	—	0.04	0.04	—	0.04	842
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	2.38	0.00	0.00	0.98	0.98	0.00	0.23	0.23	859
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	1.78	0.00	0.00	0.98	0.98	0.00	0.23	0.23	791
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.67	0.00	0.00	0.35	0.35	0.00	0.08	0.08	288
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.00	0.06	0.06	0.00	0.01	0.01	47.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Trenching (2043) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	4.44	25.1	48.7	0.13	0.58	—	0.58	0.53	—	0.53	14,124
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.44	25.1	48.7	0.13	0.58	—	0.58	0.53	—	0.53	14,124
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.64	15.0	29.0	0.08	0.34	—	0.34	0.32	—	0.32	8,403
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	2.73	5.29	0.01	0.06	—	0.06	0.06	—	0.06	1,391
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	2.31	0.00	0.00	0.98	0.98	0.00	0.23	0.23	855
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	1.74	0.00	0.00	0.98	0.98	0.00	0.23	0.23	787
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	1.09	0.00	0.00	0.58	0.58	0.00	0.13	0.13	474
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.20	0.00	0.00	0.11	0.11	0.00	0.02	0.02	78.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Trenchless Pit Excavation (2042) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	3.07	5.81	0.01	0.03	—	0.03	0.02	—	0.02	867
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.19	0.37	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	54.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.04
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.32	0.00	0.00	0.13	0.13	0.00	0.03	0.03	114
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	6.73
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Trenchless Pipe Intallation (2042) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.00	12.2	21.5	0.06	0.31	—	0.31	0.28	—	0.28	6,344
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	1.44	2.54	0.01	0.04	—	0.04	0.03	—	0.03	747
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.26	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	124
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.95	0.00	0.00	0.39	0.39	0.00	0.09	0.09	343
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.09	0.00	0.00	0.05	0.05	0.00	0.01	0.01	37.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	6.25
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Trenchless Pit Backfill (2042) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.24	6.60	12.5	0.04	0.16	—	0.16	0.15	—	0.15	3,753
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.08	0.42	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	237
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.47	0.00	0.00	0.26	0.26	0.00	0.06	0.06	211
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	13.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Trenchless Pavement Repair (2042) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	3.41	5.92	0.01	0.06	—	0.06	0.05	—	0.05	917
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.19	0.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	50.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	8.32
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.24	0.00	0.00	0.13	0.13	0.00	0.03	0.03	105
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.97
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Trenching	Trenching	7/1/2042	10/31/2043	5.00	349	—
Trenchless Pit Excavation	Trenching	7/1/2042	7/31/2042	5.00	23.0	—
Trenchless Pipe Intallation	Trenching	8/1/2042	9/30/2042	5.00	43.0	—
Trenchless Pit Backfill	Trenching	10/1/2042	10/31/2042	5.00	23.0	—
Trenchless Pavement Repair	Trenching	11/1/2042	11/30/2042	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Trenching	Excavators	Diesel	Average	6.00	8.00	36.0	0.38
Trenching	Tractors/Loaders/Backhoes	Diesel	Average	6.00	8.00	84.0	0.37
Trenching	Cranes	Diesel	Average	2.00	8.00	367	0.29
Trenching	Generator Sets	Diesel	Average	4.00	8.00	14.0	0.74
Trenching	Welders	Diesel	Average	2.00	8.00	46.0	0.45
Trenching	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Trenching	Rollers	Diesel	Average	2.00	1.00	36.0	0.38
Trenching	Off-Highway Trucks	Diesel	Average	6.00	8.00	376	0.38
Trenchless Pit Excavation	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Trenchless Pit Excavation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

Trenchless Pipe Intallation	Cranes	Diesel	Average	2.00	8.00	367	0.29
Trenchless Pipe Intallation	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Trenchless Pipe Intallation	Generator Sets	Diesel	Average	2.00	8.00	14.0	0.74
Trenchless Pipe Intallation	Welders	Diesel	Average	2.00	8.00	46.0	0.45
Trenchless Pipe Intallation	Bore/Drill Rigs	Diesel	Average	2.00	8.00	83.0	0.50
Trenchless Pipe Intallation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Trenchless Pit Backfill	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Trenchless Pit Backfill	Generator Sets	Diesel	Average	2.00	8.00	14.0	0.74
Trenchless Pit Backfill	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Trenchless Pit Backfill	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Trenchless Pavement Repair	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Trenchless Pavement Repair	Rollers	Diesel	Average	2.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Trenching	—	—	—	—
Trenching	Worker	75.0	18.5	LDA,LDT1,LDT2
Trenching	Vendor	—	10.2	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT
Trenchless Pit Excavation	—	—	—	—

Trenchless Pit Excavation	Worker	10.0	18.5	LDA,LDT1,LDT2
Trenchless Pit Excavation	Vendor	—	10.2	HHDT,MHDT
Trenchless Pit Excavation	Hauling	0.00	20.0	HHDT
Trenchless Pit Excavation	Onsite truck	—	—	HHDT
Trenchless Pipe Intallation	—	—	—	—
Trenchless Pipe Intallation	Worker	30.0	18.5	LDA,LDT1,LDT2
Trenchless Pipe Intallation	Vendor	—	10.2	HHDT,MHDT
Trenchless Pipe Intallation	Hauling	0.00	20.0	HHDT
Trenchless Pipe Intallation	Onsite truck	—	—	HHDT
Trenchless Pit Backfill	—	—	—	—
Trenchless Pit Backfill	Worker	20.0	18.5	LDA,LDT1,LDT2
Trenchless Pit Backfill	Vendor	—	10.2	HHDT,MHDT
Trenchless Pit Backfill	Hauling	0.00	20.0	HHDT
Trenchless Pit Backfill	Onsite truck	—	—	HHDT
Trenchless Pavement Repair	—	—	—	—
Trenchless Pavement Repair	Worker	10.0	18.5	LDA,LDT1,LDT2
Trenchless Pavement Repair	Vendor	—	10.2	HHDT,MHDT
Trenchless Pavement Repair	Hauling	0.00	20.0	HHDT
Trenchless Pavement Repair	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	29.1	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2042	0.00	261	0.03	< 0.005
2043	0.00	261	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.7	annual days of extreme heat
Extreme Precipitation	3.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	25.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	78.0
AQ-PM	38.2
AQ-DPM	23.4
Drinking Water	10.2
Lead Risk Housing	1.84
Pesticides	0.00
Toxic Releases	12.5
Traffic	13.0
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	10.6
Haz Waste Facilities/Generators	67.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	41.3
Cardio-vascular	92.4
Low Birth Weights	47.4
Socioeconomic Factor Indicators	—

Education	38.5
Housing	9.53
Linguistic	32.0
Poverty	10.1
Unemployment	66.6

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.08558963
Employed	29.83446683
Median HI	77.19748492
Education	—
Bachelor's or higher	40.56204286
High school enrollment	100
Preschool enrollment	58.48838701
Transportation	—
Auto Access	82.44578468
Active commuting	4.568202233
Social	—
2-parent households	81.49621455
Voting	50.73784165
Neighborhood	—
Alcohol availability	97.0101373
Park access	7.160272039
Retail density	13.80726293
Supermarket access	11.22802515

Tree canopy	4.606698319
Housing	—
Homeownership	93.26318491
Housing habitability	92.2751187
Low-inc homeowner severe housing cost burden	92.00564609
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	88.2586937
Health Outcomes	—
Insured adults	87.86090081
Arthritis	0.0
Asthma ER Admissions	86.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.2
Cognitively Disabled	62.4
Physically Disabled	34.8
Heart Attack ER Admissions	2.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—

Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	16.2
SLR Inundation Area	0.0
Children	18.1
Elderly	81.9
English Speaking	61.0
Foreign-born	27.9
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	61.7
Traffic Density	23.3
Traffic Access	23.0
Other Indices	—
Hardship	34.5
Other Decision Support	—
2016 Voting	60.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Other Non-Asphalt Surface = Phase 4 pipeline.
Construction: Construction Phases	Construction schedule per project engineer/team.
Construction: Dust From Material Movement	Material export estimated from project plans.
Construction: Off-Road Equipment	Equipment per project engineer/team. Off-Highway Trucks = dump trucks (used on-site to stockpile soil) and water trucks.
Operations: Vehicle Data	Up to 8 on-way trips per day assumed between the BPS facility and the District office on Trumble Road in Perris (17 mile one-way trip distance).
Operations: Energy Use	Project BPS building would include HVAC and lighting, accounted for by default Title 24 electricity and natural gas use. Natural gas use for pumps accounted for in Stationary Sources.
Operations: Emergency Generators and Fire Pumps	—

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lake Skinner WTS Operation 40 cfs Unmitigated R2
Operational Year	2030
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.58436861325653, -117.1195535504182
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6829
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Industrial Park	33.4	1000sqft	2.84	33,440	0.00	—	—	—
Other Asphalt Surfaces	51.4	1000sqft	1.18	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.08	4.66	4.57	0.01	0.16	0.12	0.28	0.16	0.03	0.19	1,409
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.84	4.65	3.04	0.01	0.16	0.12	0.28	0.16	0.03	0.19	1,395
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.28	1.45	2.12	< 0.005	0.06	0.08	0.14	0.06	0.02	0.08	998
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.23	0.26	0.39	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	165

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.44	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	132
Area	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	578
Water	—	—	—	—	—	—	—	—	—	—	101

Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Total	2.08	4.66	4.57	0.01	0.16	0.12	0.28	0.16	0.03	0.19	1,409
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.05	0.36	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	123
Area	0.81	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	578
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Total	1.84	4.65	3.04	0.01	0.16	0.12	0.28	0.16	0.03	0.19	1,395
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.03	0.27	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.02	89.1
Area	0.97	0.01	1.00	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.11
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	578
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	0.27	1.21	0.69	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	138
Total	1.28	1.45	2.12	< 0.005	0.06	0.08	0.14	0.06	0.02	0.08	998
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	0.01	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	14.7
Area	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Energy	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	95.7
Water	—	—	—	—	—	—	—	—	—	—	16.8
Waste	—	—	—	—	—	—	—	—	—	—	12.9

Refrig.	—	—	—	—	—	—	—	—	—	—	1.44
Stationary	0.05	0.22	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	22.9
Total	0.23	0.26	0.39	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	165

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.04	0.04	0.44	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	132
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.04	0.44	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	132
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.04	0.05	0.36	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	123
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.05	0.36	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	123
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	0.01	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	14.7
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	0.01	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	14.7

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	339
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	339
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	339
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	339
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	56.1
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	56.1

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.24	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Total	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—

Total	0.81	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.13	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Total	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	16.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	16.8

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	12.9
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	12.9

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	1.44
Total	—	—	—	—	—	—	—	—	—	—	1.44

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Total	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Total	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Annual	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.05	0.22	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	22.9
Total	0.05	0.22	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	22.9

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Industrial Park	10.00	0.00	0.00	2,607	170	0.00	0.00	44,315
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	50,160	16,720	3,084

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)

Industrial Park	470,256	261	0.0330	0.0040	745,363
Other Asphalt Surfaces	0.00	261	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Industrial Park	7,733,000	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Industrial Park	41.5	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.50	50.0	1,200	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.7	annual days of extreme heat
Extreme Precipitation	3.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	25.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	78.0
AQ-PM	38.2
AQ-DPM	23.4
Drinking Water	10.2
Lead Risk Housing	1.84
Pesticides	0.00
Toxic Releases	12.5
Traffic	13.0
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	10.6
Haz Waste Facilities/Generators	67.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	41.3
Cardio-vascular	92.4
Low Birth Weights	47.4
Socioeconomic Factor Indicators	—
Education	38.5
Housing	9.53
Linguistic	32.0
Poverty	10.1
Unemployment	66.6

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.08558963
Employed	29.83446683
Median HI	77.19748492
Education	—
Bachelor's or higher	40.56204286
High school enrollment	100
Preschool enrollment	58.48838701
Transportation	—
Auto Access	82.44578468
Active commuting	4.568202233
Social	—
2-parent households	81.49621455
Voting	50.73784165
Neighborhood	—
Alcohol availability	97.0101373
Park access	7.160272039
Retail density	13.80726293
Supermarket access	11.22802515
Tree canopy	4.606698319
Housing	—
Homeownership	93.26318491
Housing habitability	92.2751187
Low-inc homeowner severe housing cost burden	92.00564609
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	88.2586937
Health Outcomes	—

Insured adults	87.86090081
Arthritis	0.0
Asthma ER Admissions	86.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.2
Cognitively Disabled	62.4
Physically Disabled	34.8
Heart Attack ER Admissions	2.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	16.2
SLR Inundation Area	0.0
Children	18.1
Elderly	81.9

English Speaking	61.0
Foreign-born	27.9
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	61.7
Traffic Density	23.3
Traffic Access	23.0
Other Indices	—
Hardship	34.5
Other Decision Support	—
2016 Voting	60.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Industrial building = booster pump station.
Construction: Construction Phases	Construction schedule per project engineer/team. Architectural coating for BPS building assumed to occur concurrently with the last month of structure construction.
Construction: Dust From Material Movement	Material export estimated from project plans.
Construction: Off-Road Equipment	Equipment per project engineer/team. Off-Highway Trucks = dump trucks (used on-site to stockpile soil), concrete pump trucks, and water trucks.
Operations: Vehicle Data	Up to 10 one-way trips per day assumed between the BPS facility and the District office on Trumble Road in Perris (17 mile one-way trip distance).
Operations: Energy Use	Project BPS building would include HVAC and lighting, accounted for by default Title 24 electricity and natural gas use. Natural gas use for pumps accounted for off-model.
Operations: Emergency Generators and Fire Pumps	Pump and generator sizing and hours per project description.

Lake Skinner WTS Operation 40 cfs Electric R2 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lake Skinner WTS Operation 40 cfs Electric R2
Operational Year	2030
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.58436861325653, -117.1195535504182
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6829
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Industrial Park	33.4	1000sqft	2.84	33,440	0.00	—	—	—
Other Asphalt Surfaces	51.4	1000sqft	1.18	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.90	8.33	6.66	0.01	0.28	0.12	0.40	0.28	0.03	0.31	11,865
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.66	8.32	5.13	0.01	0.28	0.12	0.40	0.28	0.03	0.31	11,850
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.50	2.45	2.69	< 0.005	0.09	0.08	0.18	0.09	0.02	0.11	11,147
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.27	0.45	0.49	< 0.005	0.02	0.02	0.03	0.02	< 0.005	0.02	1,846

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.44	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	132
Area	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	10,612
Water	—	—	—	—	—	—	—	—	—	—	101

Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	1.80	8.07	4.60	0.01	0.27	0.00	0.27	0.27	0.00	0.27	927
Total	2.90	8.33	6.66	0.01	0.28	0.12	0.40	0.28	0.03	0.31	11,865
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.05	0.36	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	123
Area	0.81	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	10,612
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	1.80	8.07	4.60	0.01	0.27	0.00	0.27	0.27	0.00	0.27	927
Total	2.66	8.32	5.13	0.01	0.28	0.12	0.40	0.28	0.03	0.31	11,850
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.03	0.27	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.02	89.1
Area	0.97	0.01	1.00	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.11
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	10,612
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	0.49	2.21	1.26	< 0.005	0.07	0.00	0.07	0.07	0.00	0.07	254
Total	1.50	2.45	2.69	< 0.005	0.09	0.08	0.18	0.09	0.02	0.11	11,147
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	0.01	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	14.7
Area	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Energy	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1,757
Water	—	—	—	—	—	—	—	—	—	—	16.8
Waste	—	—	—	—	—	—	—	—	—	—	12.9

Refrig.	—	—	—	—	—	—	—	—	—	—	1.44
Stationary	0.09	0.40	0.23	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	42.0
Total	0.27	0.45	0.49	< 0.005	0.02	0.02	0.03	0.02	< 0.005	0.02	1,846

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.04	0.04	0.44	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	132
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.04	0.44	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	132
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.04	0.05	0.36	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	123
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.05	0.36	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	123
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	0.01	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	14.7
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	0.01	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	14.7

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	10,372
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	10,372
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	10,372
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	10,372
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	1,717
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	1,717

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.24	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Total	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—

Total	0.81	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.13	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Total	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	16.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	16.8

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	12.9
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	12.9

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	1.44
Total	—	—	—	—	—	—	—	—	—	—	1.44

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	1.80	8.07	4.60	0.01	0.27	0.00	0.27	0.27	0.00	0.27	927
Total	1.80	8.07	4.60	0.01	0.27	0.00	0.27	0.27	0.00	0.27	927
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	1.80	8.07	4.60	0.01	0.27	0.00	0.27	0.27	0.00	0.27	927
Total	1.80	8.07	4.60	0.01	0.27	0.00	0.27	0.27	0.00	0.27	927
Annual	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.09	0.40	0.23	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	42.0
Total	0.09	0.40	0.23	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	42.0

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Industrial Park	10.00	0.00	0.00	2,607	170	0.00	0.00	44,315
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	50,160	16,720	3,084

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)

Industrial Park	14,405,896	261	0.0330	0.0040	745,363
Other Asphalt Surfaces	0.00	261	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Industrial Park	7,733,000	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Industrial Park	41.5	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.50	50.0	2,200	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.7	annual days of extreme heat
Extreme Precipitation	3.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	25.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	78.0
AQ-PM	38.2
AQ-DPM	23.4
Drinking Water	10.2
Lead Risk Housing	1.84
Pesticides	0.00
Toxic Releases	12.5
Traffic	13.0
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	10.6
Haz Waste Facilities/Generators	67.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	41.3
Cardio-vascular	92.4
Low Birth Weights	47.4
Socioeconomic Factor Indicators	—
Education	38.5
Housing	9.53
Linguistic	32.0
Poverty	10.1
Unemployment	66.6

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.08558963
Employed	29.83446683
Median HI	77.19748492
Education	—
Bachelor's or higher	40.56204286
High school enrollment	100
Preschool enrollment	58.48838701
Transportation	—
Auto Access	82.44578468
Active commuting	4.568202233
Social	—
2-parent households	81.49621455
Voting	50.73784165
Neighborhood	—
Alcohol availability	97.0101373
Park access	7.160272039
Retail density	13.80726293
Supermarket access	11.22802515
Tree canopy	4.606698319
Housing	—
Homeownership	93.26318491
Housing habitability	92.2751187
Low-inc homeowner severe housing cost burden	92.00564609
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	88.2586937
Health Outcomes	—

Insured adults	87.86090081
Arthritis	0.0
Asthma ER Admissions	86.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.2
Cognitively Disabled	62.4
Physically Disabled	34.8
Heart Attack ER Admissions	2.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	16.2
SLR Inundation Area	0.0
Children	18.1
Elderly	81.9

English Speaking	61.0
Foreign-born	27.9
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	61.7
Traffic Density	23.3
Traffic Access	23.0
Other Indices	—
Hardship	34.5
Other Decision Support	—
2016 Voting	60.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Industrial building = booster pump station.
Construction: Construction Phases	Construction schedule per project engineer/team. Architectural coating for BPS building assumed to occur concurrently with the last month of structure construction.
Construction: Dust From Material Movement	Material export estimated from project plans.
Construction: Off-Road Equipment	Equipment per project engineer/team. Off-Highway Trucks = dump trucks (used on-site to stockpile soil), concrete pump trucks, and water trucks.
Operations: Vehicle Data	Up to 10 one-way trips per day assumed between the BPS facility and the District office on Trumble Road in Perris (17 mile one-way trip distance).
Operations: Energy Use	Project BPS building would include HVAC and lighting, accounted for by default Title 24 electricity and natural gas use. Electricity use from electric pups (13,935,640 kWh per year) accounted for in Not Subject to Title 24..
Operations: Emergency Generators and Fire Pumps	Emergency generators per project engineering team.

Lake Skinner WTS Operation 80 cfs Unmitigated R2 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lake Skinner WTS Operation 80 cfs Unmitigated R2
Operational Year	2045
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.58436861325653, -117.1195535504182
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6829
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Industrial Park	33.4	1000sqft	2.84	33,440	0.00	—	—	—
Other Asphalt Surfaces	51.4	1000sqft	1.18	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.07	4.64	4.47	0.01	0.16	0.12	0.28	0.16	0.03	0.19	1,389
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.83	4.63	2.95	0.01	0.16	0.12	0.28	0.16	0.03	0.19	1,376
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.27	1.43	2.06	< 0.005	0.06	0.08	0.14	0.06	0.02	0.08	984
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.23	0.26	0.38	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	163

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.02	0.34	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	112
Area	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	578
Water	—	—	—	—	—	—	—	—	—	—	101

Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Total	2.07	4.64	4.47	0.01	0.16	0.12	0.28	0.16	0.03	0.19	1,389
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.03	0.28	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	104
Area	0.81	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	578
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Total	1.83	4.63	2.95	0.01	0.16	0.12	0.28	0.16	0.03	0.19	1,376
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.20	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.02	75.3
Area	0.97	0.01	1.00	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.11
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	578
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	0.27	1.21	0.69	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	138
Total	1.27	1.43	2.06	< 0.005	0.06	0.08	0.14	0.06	0.02	0.08	984
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.5
Area	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Energy	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	95.7
Water	—	—	—	—	—	—	—	—	—	—	16.8
Waste	—	—	—	—	—	—	—	—	—	—	12.9

Refrig.	—	—	—	—	—	—	—	—	—	—	1.44
Stationary	0.05	0.22	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	22.9
Total	0.23	0.26	0.38	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	163

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.03	0.02	0.34	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	112
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.03	0.02	0.34	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	112
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.03	0.03	0.28	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	104
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.03	0.03	0.28	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	104
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.5
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.5

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	339
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	339
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	339
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	339
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	56.1
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	56.1

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.24	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Total	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—

Total	0.81	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.13	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Total	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	16.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	16.8

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	12.9
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	12.9

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	1.44
Total	—	—	—	—	—	—	—	—	—	—	1.44

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Total	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Total	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Annual	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.05	0.22	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	22.9
Total	0.05	0.22	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	22.9

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Industrial Park	10.00	0.00	0.00	2,607	170	0.00	0.00	44,315
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	50,160	16,720	3,084

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)

Industrial Park	470,256	261	0.0330	0.0040	745,363
Other Asphalt Surfaces	0.00	261	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Industrial Park	7,733,000	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Industrial Park	41.5	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.50	50.0	1,200	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.7	annual days of extreme heat
Extreme Precipitation	3.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	25.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	78.0
AQ-PM	38.2
AQ-DPM	23.4
Drinking Water	10.2
Lead Risk Housing	1.84
Pesticides	0.00
Toxic Releases	12.5
Traffic	13.0
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	10.6
Haz Waste Facilities/Generators	67.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	41.3
Cardio-vascular	92.4
Low Birth Weights	47.4
Socioeconomic Factor Indicators	—
Education	38.5
Housing	9.53
Linguistic	32.0
Poverty	10.1
Unemployment	66.6

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.08558963
Employed	29.83446683
Median HI	77.19748492
Education	—
Bachelor's or higher	40.56204286
High school enrollment	100
Preschool enrollment	58.48838701
Transportation	—
Auto Access	82.44578468
Active commuting	4.568202233
Social	—
2-parent households	81.49621455
Voting	50.73784165
Neighborhood	—
Alcohol availability	97.0101373
Park access	7.160272039
Retail density	13.80726293
Supermarket access	11.22802515
Tree canopy	4.606698319
Housing	—
Homeownership	93.26318491
Housing habitability	92.2751187
Low-inc homeowner severe housing cost burden	92.00564609
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	88.2586937
Health Outcomes	—

Insured adults	87.86090081
Arthritis	0.0
Asthma ER Admissions	86.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.2
Cognitively Disabled	62.4
Physically Disabled	34.8
Heart Attack ER Admissions	2.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	16.2
SLR Inundation Area	0.0
Children	18.1
Elderly	81.9

English Speaking	61.0
Foreign-born	27.9
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	61.7
Traffic Density	23.3
Traffic Access	23.0
Other Indices	—
Hardship	34.5
Other Decision Support	—
2016 Voting	60.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Industrial building = booster pump station.
Construction: Construction Phases	Construction schedule per project engineer/team. Architectural coating for BPS building assumed to occur concurrently with the last month of structure construction.
Construction: Dust From Material Movement	Material export estimated from project plans.
Construction: Off-Road Equipment	Equipment per project engineer/team. Off-Highway Trucks = dump trucks (used on-site to stockpile soil), concrete pump trucks, and water trucks.
Operations: Vehicle Data	Up to 10 one-way trips per day assumed between the BPS facility and the District office on Trumble Road in Perris (17 mile one-way trip distance).
Operations: Energy Use	Project BPS building would include HVAC and lighting, accounted for by default Title 24 electricity and natural gas use. Natural gas use for pumps accounted for off-model.
Operations: Emergency Generators and Fire Pumps	Pump and generator size and hours per project description.

Lake Skinner WTS Operation 80 cfs Hybrid R2 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lake Skinner WTS Operation 80 cfs Hybrid R2
Operational Year	2045
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.58436861325653, -117.1195535504182
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6829
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Industrial Park	33.4	1000sqft	2.84	33,440	0.00	—	—	—
Other Asphalt Surfaces	51.4	1000sqft	1.18	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.87	12.7	9.07	0.02	0.43	0.12	0.55	0.43	0.03	0.46	12,580
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.63	12.7	7.56	0.02	0.43	0.12	0.55	0.43	0.03	0.46	12,567
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.77	3.65	3.32	0.01	0.13	0.08	0.21	0.13	0.02	0.15	11,503
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.32	0.67	0.61	< 0.005	0.02	0.02	0.04	0.02	< 0.005	0.03	1,904

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.02	0.34	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	112
Area	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	10,843
Water	—	—	—	—	—	—	—	—	—	—	101

Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	2.79	12.5	7.11	0.01	0.41	0.00	0.41	0.41	0.00	0.41	1,432
Total	3.87	12.7	9.07	0.02	0.43	0.12	0.55	0.43	0.03	0.46	12,580
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.03	0.28	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	104
Area	0.81	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	10,843
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	2.79	12.5	7.11	0.01	0.41	0.00	0.41	0.41	0.00	0.41	1,432
Total	3.63	12.7	7.56	0.02	0.43	0.12	0.55	0.43	0.03	0.46	12,567
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.20	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.02	75.3
Area	0.97	0.01	1.00	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.11
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	10,843
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	0.76	3.42	1.95	< 0.005	0.11	0.00	0.11	0.11	0.00	0.11	392
Total	1.77	3.65	3.32	0.01	0.13	0.08	0.21	0.13	0.02	0.15	11,503
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.5
Area	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Energy	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1,795
Water	—	—	—	—	—	—	—	—	—	—	16.8
Waste	—	—	—	—	—	—	—	—	—	—	12.9

Refrig.	—	—	—	—	—	—	—	—	—	—	1.44
Stationary	0.14	0.62	0.36	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	65.0
Total	0.32	0.67	0.61	< 0.005	0.02	0.02	0.04	0.02	< 0.005	0.03	1,904

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.03	0.02	0.34	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	112
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.03	0.02	0.34	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	112
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.03	0.03	0.28	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	104
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.03	0.03	0.28	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	104
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.5
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.5

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	10,603
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	10,603
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	10,603
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	10,603
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	1,755
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	1,755

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.24	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Total	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—

Total	0.81	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.13	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Total	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	16.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	16.8

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	12.9
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	12.9

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	1.44
Total	—	—	—	—	—	—	—	—	—	—	1.44

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	2.79	12.5	7.11	0.01	0.41	0.00	0.41	0.41	0.00	0.41	1,432
Total	2.79	12.5	7.11	0.01	0.41	0.00	0.41	0.41	0.00	0.41	1,432
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	2.79	12.5	7.11	0.01	0.41	0.00	0.41	0.41	0.00	0.41	1,432
Total	2.79	12.5	7.11	0.01	0.41	0.00	0.41	0.41	0.00	0.41	1,432
Annual	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.14	0.62	0.36	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	65.0
Total	0.14	0.62	0.36	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	65.0

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Industrial Park	10.00	0.00	0.00	2,607	170	0.00	0.00	44,315
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	50,160	16,720	3,084

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)

Industrial Park	14,726,252	261	0.0330	0.0040	745,363
Other Asphalt Surfaces	0.00	261	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Industrial Park	7,733,000	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Industrial Park	41.5	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.50	50.0	1,200	0.73
Emergency Generator	Diesel	1.00	0.50	50.0	2,200	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.7	annual days of extreme heat
Extreme Precipitation	3.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	25.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	78.0
AQ-PM	38.2
AQ-DPM	23.4
Drinking Water	10.2
Lead Risk Housing	1.84
Pesticides	0.00
Toxic Releases	12.5
Traffic	13.0
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	10.6
Haz Waste Facilities/Generators	67.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	41.3
Cardio-vascular	92.4
Low Birth Weights	47.4
Socioeconomic Factor Indicators	—
Education	38.5
Housing	9.53
Linguistic	32.0
Poverty	10.1
Unemployment	66.6

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.08558963
Employed	29.83446683
Median HI	77.19748492
Education	—
Bachelor's or higher	40.56204286
High school enrollment	100
Preschool enrollment	58.48838701
Transportation	—
Auto Access	82.44578468
Active commuting	4.568202233
Social	—
2-parent households	81.49621455
Voting	50.73784165
Neighborhood	—
Alcohol availability	97.0101373
Park access	7.160272039
Retail density	13.80726293
Supermarket access	11.22802515
Tree canopy	4.606698319
Housing	—
Homeownership	93.26318491
Housing habitability	92.2751187
Low-inc homeowner severe housing cost burden	92.00564609
Low-inc renter severe housing cost burden	54.20248941

Uncrowded housing	88.2586937
Health Outcomes	—
Insured adults	87.86090081
Arthritis	0.0
Asthma ER Admissions	86.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.2
Cognitively Disabled	62.4
Physically Disabled	34.8
Heart Attack ER Admissions	2.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	16.2
SLR Inundation Area	0.0

Children	18.1
Elderly	81.9
English Speaking	61.0
Foreign-born	27.9
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	61.7
Traffic Density	23.3
Traffic Access	23.0
Other Indices	—
Hardship	34.5
Other Decision Support	—
2016 Voting	60.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Industrial building = booster pump station.
Construction: Construction Phases	Construction schedule per project engineer/team. Architectural coating for BPS building assumed to occur concurrently with the last month of structure construction.
Construction: Dust From Material Movement	Material export estimated from project plans.
Construction: Off-Road Equipment	Equipment per project engineer/team. Off-Highway Trucks = dump trucks (used on-site to stockpile soil), concrete pump trucks, and water trucks.
Operations: Vehicle Data	Up to 10 one-way trips per day assumed between the BPS facility and the District office on Trumble Road in Perris (17 mile one-way trip distance).
Operations: Energy Use	Project BPS building would include HVAC and lighting, accounted for by default Title 24 electricity and natural gas use. Electricity use for the two 600 hp pumps and one 1,250 hp pump (14,225.996 kWh/year) accounted for in the Not Subject to Title 24 electricity use.
Operations: Emergency Generators and Fire Pumps	Emergency generators per project engineering team.

Lake Skinner WTS Operation 80 cfs Electric R2 Detailed Report

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5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lake Skinner WTS Operation 80 cfs Electric R2
Operational Year	2045
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.58436861325653, -117.1195535504182
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6829
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Industrial Park	33.4	1000sqft	2.84	33,440	0.00	—	—	—
Other Asphalt Surfaces	51.4	1000sqft	1.18	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.69	16.4	11.2	0.02	0.55	0.12	0.67	0.55	0.03	0.58	23,014
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.45	16.4	9.65	0.02	0.55	0.12	0.67	0.55	0.03	0.58	23,001
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.99	4.65	3.89	0.01	0.16	0.08	0.25	0.16	0.02	0.18	21,630
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.36	0.85	0.71	< 0.005	0.03	0.02	0.05	0.03	< 0.005	0.03	3,581

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.02	0.34	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	112
Area	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	20,855
Water	—	—	—	—	—	—	—	—	—	—	101

Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	3.61	16.1	9.21	0.02	0.53	0.00	0.53	0.53	0.00	0.53	1,853
Total	4.69	16.4	11.2	0.02	0.55	0.12	0.67	0.55	0.03	0.58	23,014
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.03	0.28	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	104
Area	0.81	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	20,855
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	3.61	16.1	9.21	0.02	0.53	0.00	0.53	0.53	0.00	0.53	1,853
Total	4.45	16.4	9.65	0.02	0.55	0.12	0.67	0.55	0.03	0.58	23,001
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.20	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.02	75.3
Area	0.97	0.01	1.00	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.11
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	20,855
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	0.99	4.42	2.52	< 0.005	0.15	0.00	0.15	0.15	0.00	0.15	508
Total	1.99	4.65	3.89	0.01	0.16	0.08	0.25	0.16	0.02	0.18	21,630
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.5
Area	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Energy	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3,453
Water	—	—	—	—	—	—	—	—	—	—	16.8
Waste	—	—	—	—	—	—	—	—	—	—	12.9

Refrig.	—	—	—	—	—	—	—	—	—	—	1.44
Stationary	0.18	0.81	0.46	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	84.1
Total	0.36	0.85	0.71	< 0.005	0.03	0.02	0.05	0.03	< 0.005	0.03	3,581

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.03	0.02	0.34	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	112
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.03	0.02	0.34	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	112
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.03	0.03	0.28	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	104
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.03	0.03	0.28	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	104
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.5
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.5

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	20,615
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	20,615
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	20,615
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	20,615
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	3,413
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	3,413

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.24	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Total	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—

Total	0.81	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.13	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Total	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	16.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	16.8

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	12.9
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	12.9

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	1.44
Total	—	—	—	—	—	—	—	—	—	—	1.44

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	3.61	16.1	9.21	0.02	0.53	0.00	0.53	0.53	0.00	0.53	1,853
Total	3.61	16.1	9.21	0.02	0.53	0.00	0.53	0.53	0.00	0.53	1,853
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	3.61	16.1	9.21	0.02	0.53	0.00	0.53	0.53	0.00	0.53	1,853
Total	3.61	16.1	9.21	0.02	0.53	0.00	0.53	0.53	0.00	0.53	1,853
Annual	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.18	0.81	0.46	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	84.1
Total	0.18	0.81	0.46	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	84.1

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Industrial Park	10.00	0.00	0.00	2,607	170	0.00	0.00	44,315
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	50,160	16,720	3,084

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)

Industrial Park	28,631,862	261	0.0330	0.0040	745,363
Other Asphalt Surfaces	0.00	261	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Industrial Park	7,733,000	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Industrial Park	41.5	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	2.00	0.50	50.0	2,200	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.7	annual days of extreme heat
Extreme Precipitation	3.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	25.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	78.0
AQ-PM	38.2
AQ-DPM	23.4
Drinking Water	10.2
Lead Risk Housing	1.84
Pesticides	0.00
Toxic Releases	12.5
Traffic	13.0
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	10.6
Haz Waste Facilities/Generators	67.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	41.3
Cardio-vascular	92.4
Low Birth Weights	47.4
Socioeconomic Factor Indicators	—
Education	38.5
Housing	9.53
Linguistic	32.0
Poverty	10.1
Unemployment	66.6

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.08558963
Employed	29.83446683
Median HI	77.19748492
Education	—
Bachelor's or higher	40.56204286
High school enrollment	100
Preschool enrollment	58.48838701
Transportation	—
Auto Access	82.44578468
Active commuting	4.568202233
Social	—
2-parent households	81.49621455
Voting	50.73784165
Neighborhood	—
Alcohol availability	97.0101373
Park access	7.160272039
Retail density	13.80726293
Supermarket access	11.22802515
Tree canopy	4.606698319
Housing	—
Homeownership	93.26318491
Housing habitability	92.2751187
Low-inc homeowner severe housing cost burden	92.00564609
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	88.2586937
Health Outcomes	—

Insured adults	87.86090081
Arthritis	0.0
Asthma ER Admissions	86.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.2
Cognitively Disabled	62.4
Physically Disabled	34.8
Heart Attack ER Admissions	2.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	16.2
SLR Inundation Area	0.0
Children	18.1
Elderly	81.9

English Speaking	61.0
Foreign-born	27.9
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	61.7
Traffic Density	23.3
Traffic Access	23.0
Other Indices	—
Hardship	34.5
Other Decision Support	—
2016 Voting	60.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Industrial building = booster pump station.
Construction: Construction Phases	Construction schedule per project engineer/team. Architectural coating for BPS building assumed to occur concurrently with the last month of structure construction.
Construction: Dust From Material Movement	Material export estimated from project plans.
Construction: Off-Road Equipment	Equipment per project engineer/team. Off-Highway Trucks = dump trucks (used on-site to stockpile soil), concrete pump trucks, and water trucks.
Operations: Vehicle Data	Up to 10 one-way trips per day assumed between the BPS facility and the District office on Trumble Road in Perris (17 mile one-way trip distance).
Operations: Energy Use	Project BPS building would include HVAC and lighting, accounted for by default Title 24 electricity and natural gas use. Electricity use for the two 600 hp pumps and one 1,250 hp pump (28,161,606 kWh/year) accounted for in the Not Subject to Title 24 electricity use.
Operations: Emergency Generators and Fire Pumps	Emergency generators per project engineering team.

Lake Skinner WTS Operation 140 cfs Unmitigated R2 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lake Skinner WTS Operation 140 cfs Unmitigated R2
Operational Year	2050
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.58436861325653, -117.1195535504182
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6829
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Industrial Park	33.4	1000sqft	2.84	33,440	0.00	—	—	—
Other Asphalt Surfaces	51.4	1000sqft	1.18	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.07	4.64	4.46	0.01	0.16	0.12	0.28	0.16	0.03	0.19	1,388
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.83	4.63	2.95	0.01	0.16	0.12	0.28	0.16	0.03	0.19	1,375
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.27	1.43	2.05	< 0.005	0.06	0.08	0.14	0.06	0.02	0.08	983
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.23	0.26	0.37	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	163

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.33	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	110
Area	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	578
Water	—	—	—	—	—	—	—	—	—	—	101

Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Total	2.07	4.64	4.46	0.01	0.16	0.12	0.28	0.16	0.03	0.19	1,388
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.27	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	103
Area	0.81	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	578
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Total	1.83	4.63	2.95	0.01	0.16	0.12	0.28	0.16	0.03	0.19	1,375
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.20	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	74.2
Area	0.97	0.01	1.00	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.11
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	578
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	0.27	1.21	0.69	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	138
Total	1.27	1.43	2.05	< 0.005	0.06	0.08	0.14	0.06	0.02	0.08	983
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.3
Area	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Energy	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	95.7
Water	—	—	—	—	—	—	—	—	—	—	16.8
Waste	—	—	—	—	—	—	—	—	—	—	12.9

Refrig.	—	—	—	—	—	—	—	—	—	—	1.44
Stationary	0.05	0.22	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	22.9
Total	0.23	0.26	0.37	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	163

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.02	0.02	0.33	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	110
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.02	0.33	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	110
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.02	0.02	0.27	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	103
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.02	0.27	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	103
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.3
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.3

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	339
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	339
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	339
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	339
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	56.1
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	56.1

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.24	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Total	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—

Total	0.81	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.13	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Total	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	16.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	16.8

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	12.9
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	12.9

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	1.44
Total	—	—	—	—	—	—	—	—	—	—	1.44

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Total	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Total	0.98	4.40	2.51	< 0.005	0.14	0.00	0.14	0.14	0.00	0.14	505
Annual	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.05	0.22	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	22.9
Total	0.05	0.22	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	22.9

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Industrial Park	10.00	0.00	0.00	2,607	170	0.00	0.00	44,315
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	50,160	16,720	3,084

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)

Industrial Park	470,256	261	0.0330	0.0040	745,363
Other Asphalt Surfaces	0.00	261	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Industrial Park	7,733,000	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Industrial Park	41.5	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.50	50.0	1,200	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.7	annual days of extreme heat
Extreme Precipitation	3.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	25.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	78.0
AQ-PM	38.2
AQ-DPM	23.4
Drinking Water	10.2
Lead Risk Housing	1.84
Pesticides	0.00
Toxic Releases	12.5
Traffic	13.0
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	10.6
Haz Waste Facilities/Generators	67.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	41.3
Cardio-vascular	92.4
Low Birth Weights	47.4
Socioeconomic Factor Indicators	—
Education	38.5
Housing	9.53
Linguistic	32.0
Poverty	10.1
Unemployment	66.6

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.08558963
Employed	29.83446683
Median HI	77.19748492
Education	—
Bachelor's or higher	40.56204286
High school enrollment	100
Preschool enrollment	58.48838701
Transportation	—
Auto Access	82.44578468
Active commuting	4.568202233
Social	—
2-parent households	81.49621455
Voting	50.73784165
Neighborhood	—
Alcohol availability	97.0101373
Park access	7.160272039
Retail density	13.80726293
Supermarket access	11.22802515
Tree canopy	4.606698319
Housing	—
Homeownership	93.26318491
Housing habitability	92.2751187
Low-inc homeowner severe housing cost burden	92.00564609
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	88.2586937
Health Outcomes	—

Insured adults	87.86090081
Arthritis	0.0
Asthma ER Admissions	86.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.2
Cognitively Disabled	62.4
Physically Disabled	34.8
Heart Attack ER Admissions	2.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	16.2
SLR Inundation Area	0.0
Children	18.1
Elderly	81.9

English Speaking	61.0
Foreign-born	27.9
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	61.7
Traffic Density	23.3
Traffic Access	23.0
Other Indices	—
Hardship	34.5
Other Decision Support	—
2016 Voting	60.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Industrial building = booster pump station.
Construction: Construction Phases	Construction schedule per project engineer/team. Architectural coating for BPS building assumed to occur concurrently with the last month of structure construction.
Construction: Dust From Material Movement	Material export estimated from project plans.
Construction: Off-Road Equipment	Equipment per project engineer/team. Off-Highway Trucks = dump trucks (used on-site to stockpile soil), concrete pump trucks, and water trucks.
Operations: Vehicle Data	Up to 10 one-way trips per day assumed between the BPS facility and the District office on Trumble Road in Perris (17 mile one-way trip distance).
Operations: Energy Use	Project BPS building would include HVAC and lighting, accounted for by default Title 24 electricity and natural gas use. Natural gas use for pumps accounted for off-model.
Operations: Emergency Generators and Fire Pumps	Pump and generator sizes and hours per project description.

Lake Skinner WTS Operation 140 cfs Hybrid R2 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lake Skinner WTS Operation 140 cfs Hybrid R2
Operational Year	2050
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.58436861325653, -117.1195535504182
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6829
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Industrial Park	33.4	1000sqft	2.84	33,440	0.00	—	—	—
Other Asphalt Surfaces	51.4	1000sqft	1.18	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.33	23.7	15.3	0.03	0.79	0.12	0.91	0.79	0.03	0.82	34,862
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.09	23.7	13.8	0.03	0.79	0.12	0.91	0.79	0.03	0.82	34,849
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.44	6.66	5.03	0.01	0.23	0.08	0.31	0.23	0.02	0.25	32,868
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.45	1.22	0.92	< 0.005	0.04	0.02	0.06	0.04	< 0.005	0.05	5,442

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.33	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	110
Area	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	31,862
Water	—	—	—	—	—	—	—	—	—	—	101

Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	5.25	23.5	13.4	0.03	0.77	0.00	0.77	0.77	0.00	0.77	2,695
Total	6.33	23.7	15.3	0.03	0.79	0.12	0.91	0.79	0.03	0.82	34,862
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.27	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	103
Area	0.81	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	31,862
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	5.25	23.5	13.4	0.03	0.77	0.00	0.77	0.77	0.00	0.77	2,695
Total	6.09	23.7	13.8	0.03	0.79	0.12	0.91	0.79	0.03	0.82	34,849
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.20	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	74.2
Area	0.97	0.01	1.00	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.11
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	31,862
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	1.44	6.43	3.67	0.01	0.21	0.00	0.21	0.21	0.00	0.21	738
Total	2.44	6.66	5.03	0.01	0.23	0.08	0.31	0.23	0.02	0.25	32,868
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.3
Area	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Energy	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5,275
Water	—	—	—	—	—	—	—	—	—	—	16.8
Waste	—	—	—	—	—	—	—	—	—	—	12.9

Refrig.	—	—	—	—	—	—	—	—	—	—	1.44
Stationary	0.26	1.17	0.67	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	122
Total	0.45	1.22	0.92	< 0.005	0.04	0.02	0.06	0.04	< 0.005	0.05	5,442

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.02	0.02	0.33	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	110
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.02	0.33	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	110
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.02	0.02	0.27	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	103
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.02	0.27	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	103
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.3
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.3

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	31,623
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	31,623
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	31,623
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	31,623
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	5,236
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	5,236

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.24	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Total	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—

Total	0.81	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.13	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Total	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	16.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	16.8

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	12.9
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	12.9

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	1.44
Total	—	—	—	—	—	—	—	—	—	—	1.44

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	5.25	23.5	13.4	0.03	0.77	0.00	0.77	0.77	0.00	0.77	2,695
Total	5.25	23.5	13.4	0.03	0.77	0.00	0.77	0.77	0.00	0.77	2,695
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	5.25	23.5	13.4	0.03	0.77	0.00	0.77	0.77	0.00	0.77	2,695
Total	5.25	23.5	13.4	0.03	0.77	0.00	0.77	0.77	0.00	0.77	2,695
Annual	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.26	1.17	0.67	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	122
Total	0.26	1.17	0.67	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	122

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Industrial Park	10.00	0.00	0.00	2,607	170	0.00	0.00	44,315
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	50,160	16,720	3,084

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)

Industrial Park	43,919,856	261	0.0330	0.0040	745,363
Other Asphalt Surfaces	0.00	261	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Industrial Park	7,733,000	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Industrial Park	41.5	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.50	50.0	1,200	0.73
Emergency Generator	Diesel	1.00	0.50	50.0	2,200	0.73
Emergency Generator	Diesel	1.00	0.50	50.0	3,000	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.7	annual days of extreme heat
Extreme Precipitation	3.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	25.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	78.0
AQ-PM	38.2
AQ-DPM	23.4
Drinking Water	10.2
Lead Risk Housing	1.84
Pesticides	0.00
Toxic Releases	12.5
Traffic	13.0
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	10.6
Haz Waste Facilities/Generators	67.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	41.3
Cardio-vascular	92.4
Low Birth Weights	47.4
Socioeconomic Factor Indicators	—
Education	38.5
Housing	9.53
Linguistic	32.0
Poverty	10.1
Unemployment	66.6

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.08558963
Employed	29.83446683
Median HI	77.19748492
Education	—
Bachelor's or higher	40.56204286
High school enrollment	100
Preschool enrollment	58.48838701
Transportation	—
Auto Access	82.44578468
Active commuting	4.568202233
Social	—
2-parent households	81.49621455
Voting	50.73784165
Neighborhood	—
Alcohol availability	97.0101373
Park access	7.160272039
Retail density	13.80726293
Supermarket access	11.22802515
Tree canopy	4.606698319
Housing	—
Homeownership	93.26318491
Housing habitability	92.2751187
Low-inc homeowner severe housing cost burden	92.00564609
Low-inc renter severe housing cost burden	54.20248941

Uncrowded housing	88.2586937
Health Outcomes	—
Insured adults	87.86090081
Arthritis	0.0
Asthma ER Admissions	86.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.2
Cognitively Disabled	62.4
Physically Disabled	34.8
Heart Attack ER Admissions	2.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	16.2
SLR Inundation Area	0.0

Children	18.1
Elderly	81.9
English Speaking	61.0
Foreign-born	27.9
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	61.7
Traffic Density	23.3
Traffic Access	23.0
Other Indices	—
Hardship	34.5
Other Decision Support	—
2016 Voting	60.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Industrial building = booster pump station.
Construction: Construction Phases	Construction schedule per project engineer/team. Architectural coating for BPS building assumed to occur concurrently with the last month of structure construction.
Construction: Dust From Material Movement	Material export estimated from project plans.
Construction: Off-Road Equipment	Equipment per project engineer/team. Off-Highway Trucks = dump trucks (used on-site to stockpile soil), concrete pump trucks, and water trucks.
Operations: Vehicle Data	Up to 10 one-way trips per day assumed between the BPS facility and the District office on Trumble Road in Perris (17 mile one-way trip distance).
Operations: Energy Use	Project BPS building would include HVAC and lighting, accounted for by default Title 24 electricity and natural gas use. Electricity use for the two 600 HP pumps and one four 1,250 hp pumps (43,449,600 kWh/year) accounted for in the Not Subject to Title 24 electricity use.
Operations: Emergency Generators and Fire Pumps	Emergency generators per project engineering team.

Lake Skinner WTS Operation 140 cfs Electric R2 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lake Skinner WTS Operation 140 cfs Electric R2
Operational Year	2050
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.58436861325653, -117.1195535504182
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6829
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Industrial Park	33.4	1000sqft	2.84	33,440	0.00	—	—	—
Other Asphalt Surfaces	51.4	1000sqft	1.18	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.15	27.4	17.4	0.03	0.91	0.12	1.03	0.91	0.03	0.94	39,954
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.91	27.4	15.9	0.03	0.91	0.12	1.03	0.91	0.03	0.94	39,941
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.66	7.67	5.61	0.01	0.26	0.08	0.35	0.26	0.02	0.28	37,653
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.49	1.40	1.02	< 0.005	0.05	0.02	0.06	0.05	< 0.005	0.05	6,234

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.33	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	110
Area	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	36,533
Water	—	—	—	—	—	—	—	—	—	—	101

Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	6.07	27.2	15.5	0.03	0.89	0.00	0.89	0.89	0.00	0.89	3,117
Total	7.15	27.4	17.4	0.03	0.91	0.12	1.03	0.91	0.03	0.94	39,954
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.27	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	103
Area	0.81	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	36,533
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	6.07	27.2	15.5	0.03	0.89	0.00	0.89	0.89	0.00	0.89	3,117
Total	6.91	27.4	15.9	0.03	0.91	0.12	1.03	0.91	0.03	0.94	39,941
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.20	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	74.2
Area	0.97	0.01	1.00	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.11
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	36,533
Water	—	—	—	—	—	—	—	—	—	—	101
Waste	—	—	—	—	—	—	—	—	—	—	78.2
Refrig.	—	—	—	—	—	—	—	—	—	—	8.70
Stationary	1.66	7.44	4.24	0.01	0.24	0.00	0.24	0.24	0.00	0.24	854
Total	2.66	7.67	5.61	0.01	0.26	0.08	0.35	0.26	0.02	0.28	37,653
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.3
Area	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Energy	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6,048
Water	—	—	—	—	—	—	—	—	—	—	16.8
Waste	—	—	—	—	—	—	—	—	—	—	12.9

Refrig.	—	—	—	—	—	—	—	—	—	—	1.44
Stationary	0.30	1.36	0.77	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	141
Total	0.49	1.40	1.02	< 0.005	0.05	0.02	0.06	0.05	< 0.005	0.05	6,234

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.02	0.02	0.33	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	110
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.02	0.33	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	110
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.02	0.02	0.27	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	103
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.02	0.27	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	103
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.3
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	< 0.005	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	12.3

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	36,293
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	36,293
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	36,293
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	36,293
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	6,009
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	6,009

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	240
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.7

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.24	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Total	1.05	0.01	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.72	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—	—	—

Total	0.81	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.13	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68
Total	0.18	< 0.005	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.68

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	101
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	101
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	16.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	16.8

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	78.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	78.2
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	12.9
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	12.9

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.70
Total	—	—	—	—	—	—	—	—	—	—	8.70
Annual	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	1.44
Total	—	—	—	—	—	—	—	—	—	—	1.44

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	6.07	27.2	15.5	0.03	0.89	0.00	0.89	0.89	0.00	0.89	3,117
Total	6.07	27.2	15.5	0.03	0.89	0.00	0.89	0.89	0.00	0.89	3,117
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	6.07	27.2	15.5	0.03	0.89	0.00	0.89	0.89	0.00	0.89	3,117
Total	6.07	27.2	15.5	0.03	0.89	0.00	0.89	0.89	0.00	0.89	3,117
Annual	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.30	1.36	0.77	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	141
Total	0.30	1.36	0.77	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	141

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Industrial Park	10.00	0.00	0.00	2,607	170	0.00	0.00	44,315
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	50,160	16,720	3,084

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)

Industrial Park	50,406,300	261	0.0330	0.0040	745,363
Other Asphalt Surfaces	0.00	261	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Industrial Park	7,733,000	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Industrial Park	41.5	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	2.00	0.50	50.0	2,200	0.73
Emergency Generator	Diesel	1.00	0.50	50.0	3,000	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.7	annual days of extreme heat
Extreme Precipitation	3.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	25.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	78.0
AQ-PM	38.2
AQ-DPM	23.4
Drinking Water	10.2
Lead Risk Housing	1.84
Pesticides	0.00
Toxic Releases	12.5
Traffic	13.0
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	10.6
Haz Waste Facilities/Generators	67.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	41.3
Cardio-vascular	92.4
Low Birth Weights	47.4
Socioeconomic Factor Indicators	—
Education	38.5
Housing	9.53
Linguistic	32.0
Poverty	10.1
Unemployment	66.6

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.08558963
Employed	29.83446683
Median HI	77.19748492
Education	—
Bachelor's or higher	40.56204286
High school enrollment	100
Preschool enrollment	58.48838701
Transportation	—
Auto Access	82.44578468
Active commuting	4.568202233
Social	—
2-parent households	81.49621455
Voting	50.73784165
Neighborhood	—
Alcohol availability	97.0101373
Park access	7.160272039
Retail density	13.80726293
Supermarket access	11.22802515
Tree canopy	4.606698319
Housing	—
Homeownership	93.26318491
Housing habitability	92.2751187
Low-inc homeowner severe housing cost burden	92.00564609
Low-inc renter severe housing cost burden	54.20248941

Uncrowded housing	88.2586937
Health Outcomes	—
Insured adults	87.86090081
Arthritis	0.0
Asthma ER Admissions	86.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.2
Cognitively Disabled	62.4
Physically Disabled	34.8
Heart Attack ER Admissions	2.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	16.2
SLR Inundation Area	0.0

Children	18.1
Elderly	81.9
English Speaking	61.0
Foreign-born	27.9
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	61.7
Traffic Density	23.3
Traffic Access	23.0
Other Indices	—
Hardship	34.5
Other Decision Support	—
2016 Voting	60.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Industrial building = booster pump station.
Construction: Construction Phases	Construction schedule per project engineer/team. Architectural coating for BPS building assumed to occur concurrently with the last month of structure construction.
Construction: Dust From Material Movement	Material export estimated from project plans.
Construction: Off-Road Equipment	Equipment per project engineer/team. Off-Highway Trucks = dump trucks (used on-site to stockpile soil), concrete pump trucks, and water trucks.
Operations: Vehicle Data	Up to 10 one-way trips per day assumed between the BPS facility and the District office on Trumble Road in Perris (17 mile one-way trip distance).
Operations: Energy Use	Project BPS building would include HVAC and lighting, accounted for by default Title 24 electricity and natural gas use. Electricity use for the two 600 HP pumps and one four 1,250 hp pumps (49,936,044 kWh/year) accounted for in the Not Subject to Title 24 electricity use.
Operations: Emergency Generators and Fire Pumps	Emergency generators per project engineering team.

Appendix D

Biological Technical Report

HELIX Environmental Planning

Eastern Municipal Water District Lake Skinner Regional Water Transmission System Project

Biological Technical Report

August 2026 | 00244.00057.001

Prepared for:

Eastern Municipal Water District
P.O. Box 8300
Perris, CA 92572-8300

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

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ACRONYMS AND ABBREVIATIONS

amsl	above mean sea level
BMP	Best Management Practices
BPS	booster pump station
BUOW	burrowing owl
CAGN	Coastal California gnatcatcher
CBB	Crotch's bumble bee
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG Code	California Fish and Game Code
cfs	cubic feet per second
CH	Critical Habitat
CMU	cement masonry unit
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
dBa	A-weighted decibels
DBESP	Determination of Biologically Equivalent or Superior Preservation
District	Eastern Municipal Water District
EMWD	Eastern Municipal Water District
ESA	Environmentally Sensitive Area
ESA	Endangered Species Act
FC	federally-listed candidate
FE	federally-listed endangered
FESA	Federal Endangered Species Act
FT	federally-listed threatened
HCP	Habitat Conservation Plan
HELIX	HELIX Environmental Planning, Inc.
IPaC	Information for Planning and Consultation
LBVI	least Bell's vireo

ACRONYMS AND ABBREVIATIONS (cont.)

m	meters
MBTA	Migratory Bird Treaty Act
MCV	Manual of California Vegetation
Metropolitan	Metropolitan Water District of Southern California
MSHCP	Multiple Species Habitat Conservation Plan
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
Project	Lake Skinner Regional Water Transmission System Project
PSE	Participating Special Entity
PZ	Pressure Zone
QCB	Quino checkerspot butterfly
RCA	Regional Conservation Authority
RCHCA	Riverside County Habitat Conservation Agency
ROW	right(s)-of-way
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SBKR	San Bernardino kangaroo rat
Skinner WTP	Metropolitan Water District's Robert A. Skinner Water Treatment Plant
SKR	Stephens' kangaroo rat
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WDR	Waste Discharge Requirement
Wildlife Agencies	U.S. Fish and Wildlife Service and California Department of Fish and Wildlife
WTP	Water Treatment Plant

EXECUTIVE SUMMARY

This biological technical report was prepared to evaluate the proposed Eastern Municipal Water District's (EMWD; District) Lake Skinner Regional Water Transmission System Project (Project). The approximately 311-acre study area is located within unincorporated areas of Riverside County, east of the cities of Menifee and Murrieta. The study area is comprised of the centerline of the proposed pipeline alignment with a 100-foot buffer on each side, along with the potential locations for the pump station and turnout facility. The purpose of this report is to document the existing biological conditions within the study area, analyze the Project's potential impacts to sensitive biological resources with respect to local, state, and federal policy, and recommend mitigation measures to reduce potential Project impacts to less than significant. This report provides the biological resources technical documentation necessary for review under the California Environmental Quality Act. EMWD is not a signatory to the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and, as such, is not subject to the requirements of the MSHCP.

The Project includes construction and operation of three main components: (1) a new water service connection (turnout) to transfer treated water deliveries from the Metropolitan Water District's Robert A. Skinner Water Treatment Plant (Skinner WTP) to EMWD; (2) a new booster pump station that would connect to the turnout to pump water to EMWD's service area; and (3) new transmission pipelines to deliver water from Skinner WTP to EMWD's service area. Collectively, these components comprise the Project and would be sized to meet the buildout demand condition of 140 cubic feet per second (cfs) of additional treated water supplies. The Project would be implemented in four phases over a 20-year period and thus, the analysis in this report is programmatic in nature due to the limited availability of current Project-specific details.

HELIX conducted vegetation mapping and a special-status species habitat assessment on March 2, 2023. Rare plant surveys were conducted from March to June 2023 during the appropriate blooming period for plant species with potential to occur. Additional vegetation mapping was conducted on May 15, 2025, for the pump station area that was not included during the 2023 field work. Vegetation communities present within the study area were mapped based on the Holland/Oberbauer classification system and cross-referenced to the Manual of California Vegetation (MCV) where feasible. Five communities were described using Holland/Oberbauer since descriptions for these communities were not available in MCV. There are 14 plant alliances, associations, semi natural stands present, or land uses within the study area: mule fat thickets, Goodding's willow-red willow riparian woodland and forest, disturbed wetland, cattail marsh, tamarisk scrub, basin/pool, open water, California buckwheat scrub, eucalyptus-tree of heaven-black locust groves, wild oat (*Avena* sp.) and annual brome grasslands (non-native grassland), disturbed habitat, developed, and agriculture.

Two sensitive plant species were observed within the study area: California Native Plant Society (CNPS) rank 1B.1 smooth tarplant (*Centromadia pungens* ssp. *Laevis*) and CNPS rank 4.2 paniculate tarplant (*Deinandra paniculata*). Although the impacts to paniculate tarplant, should they occur, would not be significant as that species is a CNPS rank 4.2 species. Neither of the sensitive plants observed are listed as threatened or endangered at the state or federal level therefore impacts to listed plant species are not expected. Impacts to smooth tarplant, if they occur, would be mitigated via transplanting to a suitable habitat in close proximity, or by revegetation (seeding) of the impact area with the species. Additionally, a habitat mitigation and monitoring plan would be prepared with species-specific success criteria in the event that listed plant species cannot be avoided.

Three special-status animal species, federal and state endangered least Bell's vireo (*Vireo bellii pusillus*; LBVI), California Department of Fish and Wildlife (CDFW) watch list species California horned lark (*Eremophila alpestris actia*), and orange throated whiptail (*Aspidoscelis hyperythrus*) were observed within or adjacent to the study area during the 2023 biological surveys. The study area additionally supports suitable habitat for the following special-status species: Crotch's bumble bee (*Bombus crotchii*; CBB), burrowing owl (*Athene cunicularia*; BUOW), coastal California gnatcatcher (*Polioptila californica californica*; CAGN), Quino checkerspot butterfly (*Euphydryas editha quino*; QCB), Stephens' kangaroo rat (*Dipodomys stephensi*; SKR), San Bernardino kangaroo rat (*Dipodomys merriami parvus*; SBKR), coastal whiptail (*Aspidoscelis tigris stejnegeri),* red-diamond rattlesnake (*Crotalus ruber*), San Bernardino ringneck snake (*Diadophis punctatus modestus*), coast horned lizard (*Phrynosoma blainvillii*), Bell's sage sparrow (*Artemisiospiza belli belli*), loggerhead shrike (*Lanius ludovicianus*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), San Diego desert woodrat (*Neotoma lepida intermedia*), southern grasshopper mouse (*Onychomys torridus ramona*), and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*). Impacts to these species would be reduced to less than significant levels with the implementation of proposed biological mitigation measures. The Project would have no impact on any other animal species due to the lack of suitable habitat on the site and regular disturbance that occurs within the study area.

Five riparian habitats that may be wetlands as defined by Section 404 of the Clean Water Act (CWA) occur along the Project alignment. A formal jurisdictional delineation of the study area would be conducted to identify and map aquatic resources potentially subject to U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of CWA, Regional Water Quality Control Board (RWQCB) jurisdiction pursuant to Section 401 of the CWA and State Porter-Cologne Water Quality Control Act, and streambed and riparian habitat potentially subject to CDFW jurisdiction pursuant to Sections 1600 *et seq*. of the California Fish and Game (CFG) Code, in the event that the potential wetland areas cannot be fully avoided by the Project.

It is expected that direct impacts to jurisdictional aquatic resources would be avoided through construction methods such as jack and bore, micro-tunneling, Project design, and standard best management practices (BMPs).

1.0 INTRODUCTION

This report describes the results of a biological resources study conducted by HELIX Environmental Planning, Inc. (HELIX) for the proposed Eastern Municipal Water District (EMWD) Lake Skinner Regional Water Transmission System Project, referred to herein as "Project." The proposed Project would receive and convey additional treated water deliveries from the Metropolitan Water District of Southern California's (Metropolitan's) Robert A. Skinner Water Treatment Plant (Skinner WTP).

The purpose of this report is to document the existing biological conditions within an approximately 311-acre study area (includes the proposed pipe alignment as well as a 100-foot buffer from the alignment); provide an analysis of the proposed Project's potential impacts on sensitive biological resources with respect to local, state, and federal regulations; and recommend mitigation measures that may be used to avoid, minimize, and mitigate potential impacts. This report provides the biological resources technical documentation necessary for EMWD review under the California Environmental Quality Act (CEQA).

1.1 PROJECT LOCATION

The proposed Project would be located predominantly within unincorporated areas of Riverside County, California (Figure 1, *Regional Vicinity*). The transmission pipelines would extend in an overall northern direction from the Skinner WTP approximately 14 miles through the southern Perris Valley area to the community of Winchester. The northern end of the Project occurs north of Domenigoni Parkway and west of Diamond Valley Lake with the southern end located along Washington Street and west of Lake Skinner (Figure 2a, *Project Alignment*). Potential locations for the pump station and turnout are east and west of Leon Road at the intersection with Auld Road (Figure 2b, *Potential Booster Pump Station/Turnout Sites*). Surface elevations within the Project alignment range from 1,339 feet above mean sea level (amsl) to 1,500 amsl with the highest elevation being near the northern end and the lowest elevations being along Leon Road just north of Auld Road.

1.2 PROJECT DESCRIPTION

The Project includes construction and operation of three main components: (1) a new water service connection (turnout) to transfer treated water deliveries from the Metropolitan Water District's Robert A. Skinner Water Treatment Plant (Skinner WTP) to EMWD; (2) a new booster pump station that would connect to the turnout to pump water to EMWD's service area; and (3) new and relined transmission pipelines to deliver water from Skinner WTP to EMWD's service area. Collectively, these components comprise the Project and would be sized to meet the buildout demand condition of 140 cubic feet per second (cfs) of additional treated water supplies.

The Project would be implemented in four phases over a 20-year period and thus the analysis in this report is programmatic in nature due to the current availability of Project-specific details.

Staging area locations have not yet been identified; staging areas would be located within developed property or within a parcel that would be acquired by EMWD for the Project and within the study area surveyed for this report.

Details regarding the primary components of the Project are provided below.

1.2.1 Water Service Connection (Turnout) to Metropolitan Facility

The Project would involve the construction of a turnout near the intersection of Auld Road and Leon Road that would initially connect to Metropolitan's existing Auld Valley Pipeline. The turnout would provide the connection point to transfer treated water from the Skinner WTP (conveyed through the existing Auld Valley Pipeline) to proposed facilities (booster pump station [BPS] and transmission pipelines) owned and operated by EMWD. The turnout connection would consist of equipment housed in two underground vaults (rooms) spaced about 30 feet apart. The turnout would change the direction of the water flow and regulate the pressure and velocity from the Metropolitan pipeline to EMWD's facilities.

1.2.2 Booster Pump Station

The new BPS, located at the intersection of Auld Road and Leon Road adjacent to the proposed turnout, would receive treated water from the Skinner WTP via the existing Auld Valley Pipeline and proposed turnout. The BPS would function to increase water pressure in the proposed transmission pipelines north of the BPS (described below) enabling delivery of water to EMWD's 1627 Pressure Zone (PZ).

The BPS would be located on the north side of Auld Road, either to the west or east of Leon Road. For planning purposes, a 350-foot-by-500-foot site (approximately four acres) is proposed to accommodate the BPS. The site layout assumes a 25-foot landscaped setback along the frontage road. An access driveway with motorized rolling access gates would provide ingress/egress to the site, with an eight-foot cement masonry unit (CMU) perimeter wall securing the entire site. A service road would encircle the pump building allowing for maintenance access and operating space, including for the removal and maintenance of BPS components (pumps, motors, valves, pipe, generators, etc.). The service road includes parking spaces for maintenance staff and service equipment.

Mechanical and electrical pumping equipment would be located within a common, single-story masonry block building. It would include adequate space to accommodate the number of pumps needed for the planned maximum buildout capacity of 140 cfs.

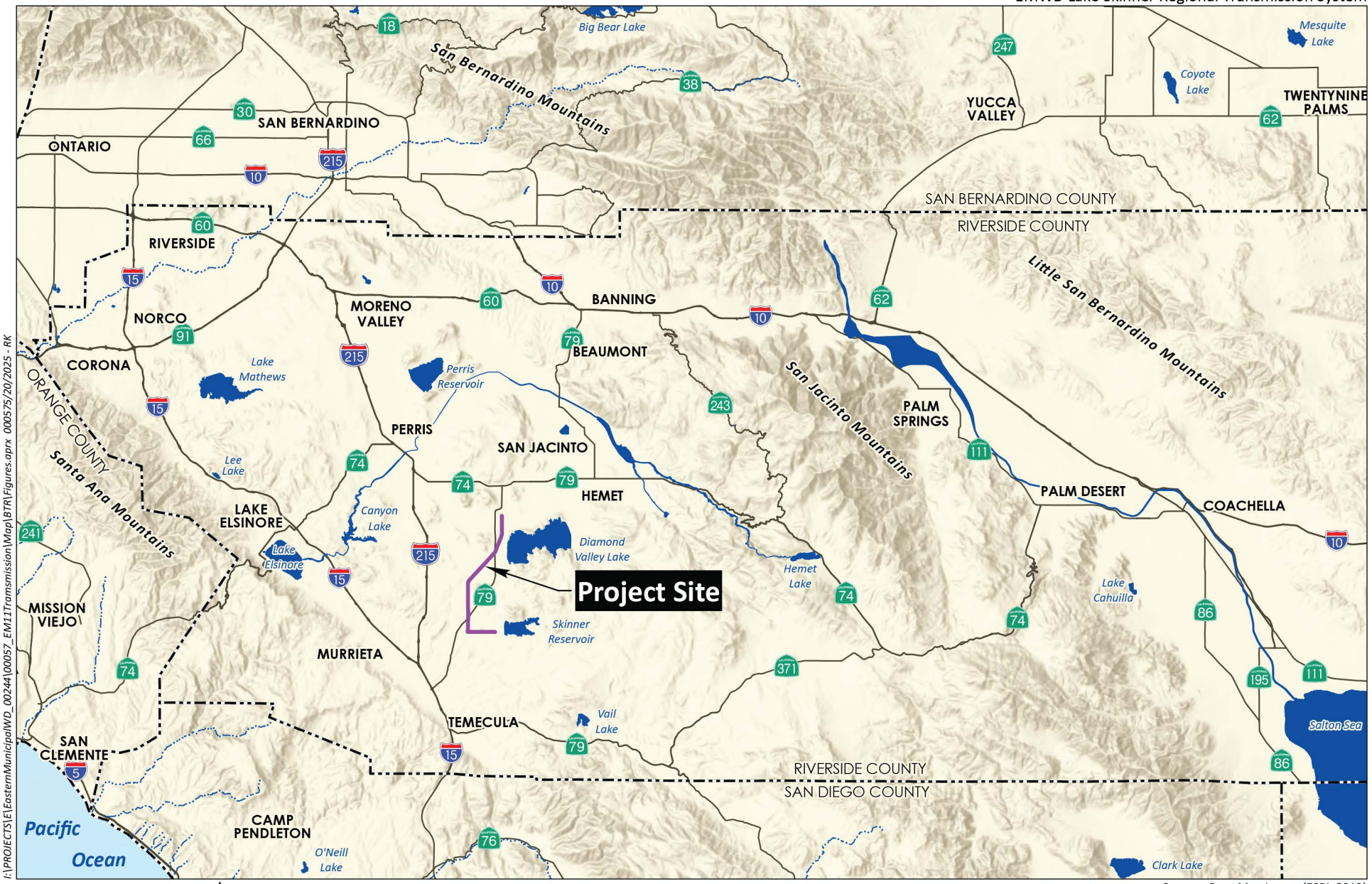
1.2.3 Transmission Pipeline

As part of Phase 1 of the Project, EMWD would reline either the existing SD Pipeline 1 or SD Pipeline 2 with steel pipe from the new BPS at the intersection of Auld Road and Leon Road north to a location near the Leon Road/Fowler Drive intersection. Within this reach, SD Pipelines 1 and 2 are located within a Metropolitan easement that parallels the eastern side of Leon Road. The relining of SD Pipeline 1 or SD Pipeline 2 as part of Phase 1 of the Project would terminate at a service connection to EMWD's 1627 PZ, located at the intersection of Leon Road and Fowler Drive. EMWD's use of Metropolitan's SD Pipeline 1 or SD Pipeline 2 and associated easement would require approval by Metropolitan and/or the sale/transfer of these components from Metropolitan to EMWD. Whichever pipeline, SD Pipeline 1 or SD Pipeline 2, is not relined as part of the Project would continue to convey surface water flows from Diamond Valley Lake to the downstream location.

1.2.4 Phase 2

Phase 2 consists of relining approximately 16,900 feet of either SD Pipeline 1 or SD Pipeline 2 that extends from the service connection near the Leon Road/Fowler Drive intersection in a northeastern

EMWD Lake Skinner Regional Transmission System



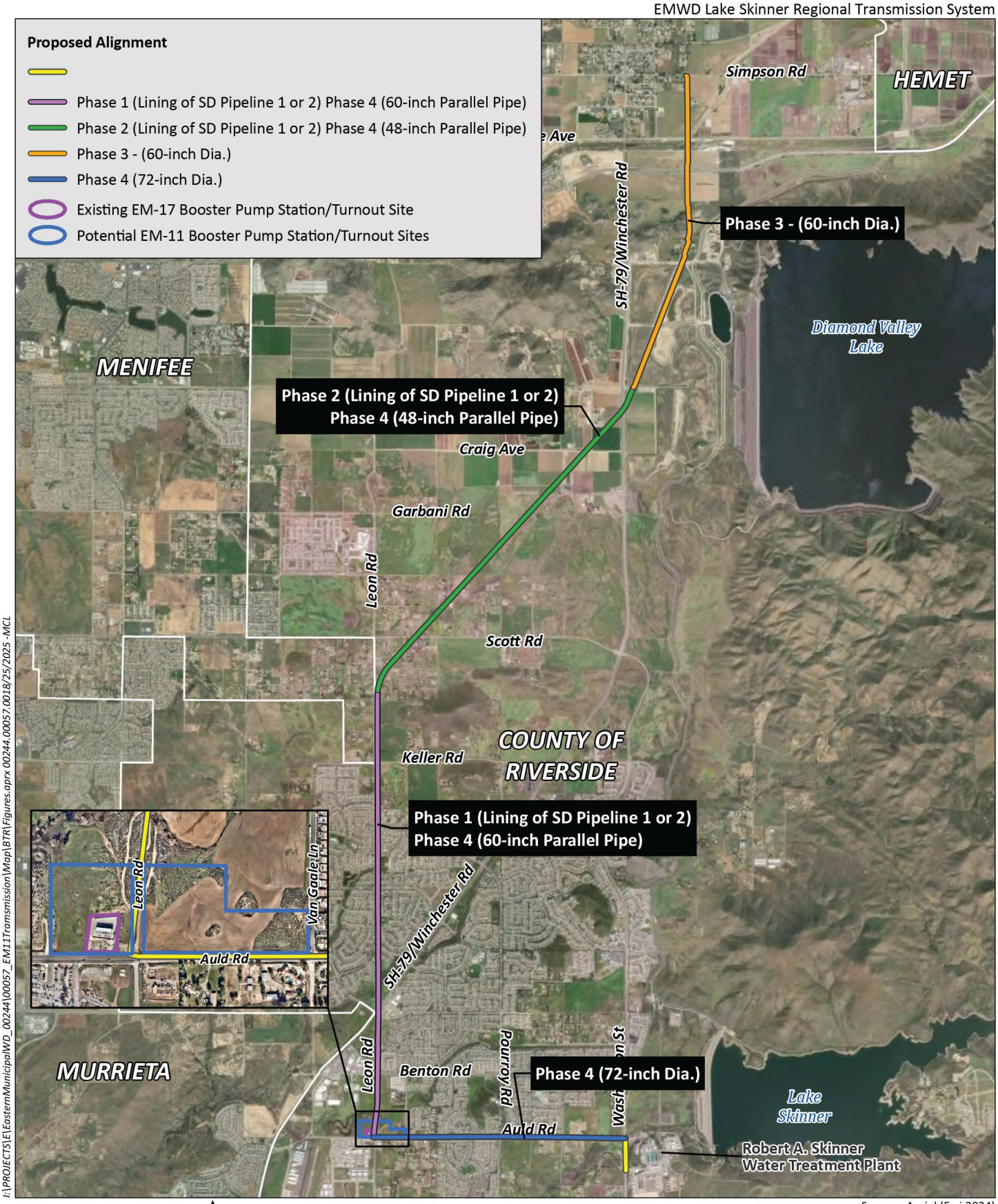
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Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Vicinity

Figure 1



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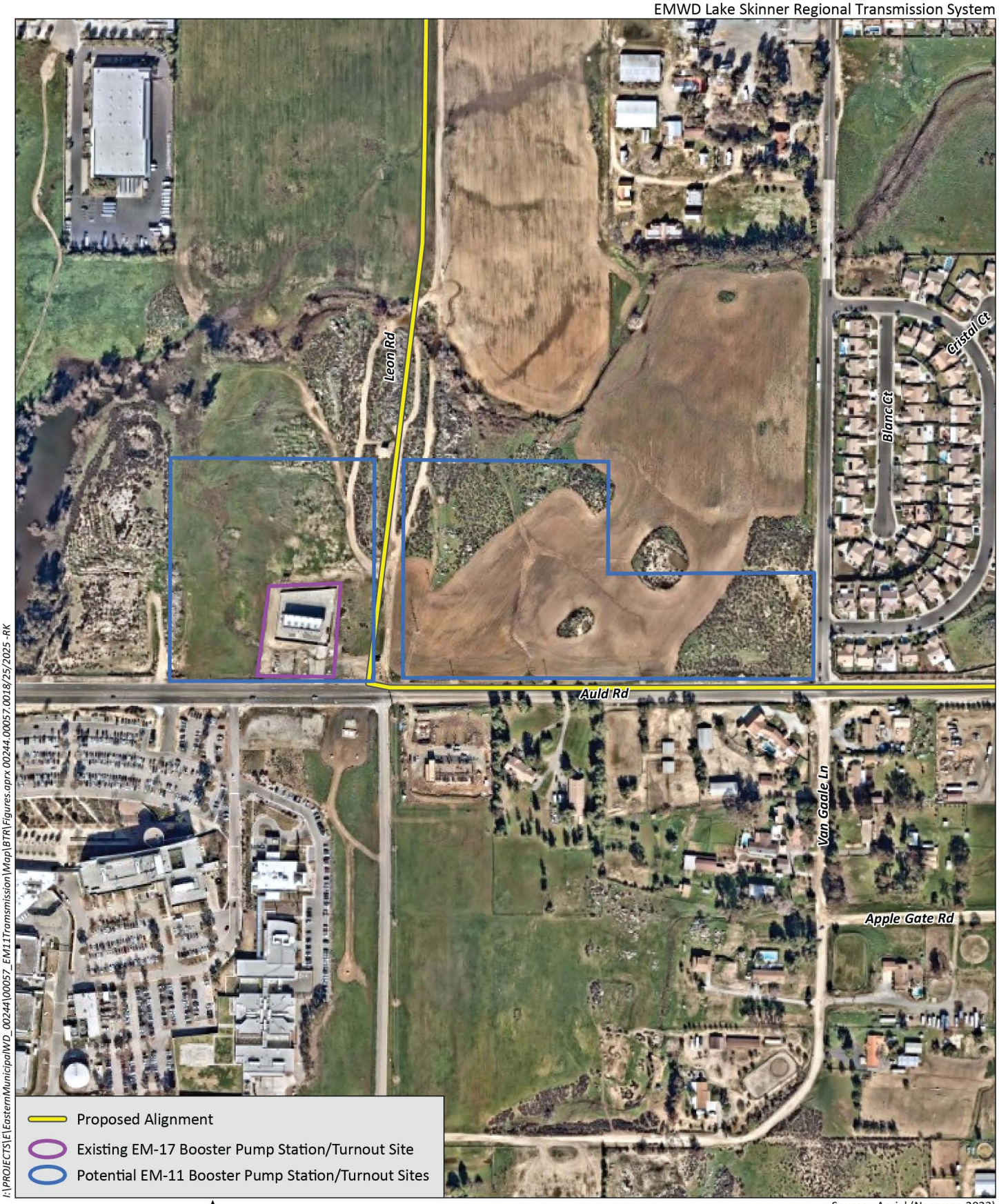
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Source: Aerial (Esri 2024)

HELIX Environmental Planning

Project Alignment

Figure 2a



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Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Potential Booster Pump Station/Turnout Sites

Figure 2b

direction within a Metropolitan easement to a service connection to EMWD's 1627 PZ at Holland Road east of State Route (SR) 79. As mentioned above, EMWD's use of Metropolitan's SD Pipeline 1 or SD Pipeline 2 and associated easement would require approval by Metropolitan and/or the sale/transfer of these components from Metropolitan to EMWD. Whichever pipeline, SD Pipeline 1 or SD Pipeline 2, is not relined as part of the Project would continue to convey surface water flows from Diamond Valley Lake to the downstream location.

1.2.5 Phase 3

Phase 3 consists of installing approximately 6,600 feet of new 60-inch-diameter pipeline from the service connection at Holland Road in a northeastern direction to approximately 1,300 feet north of Newport Road. This reach is within Metropolitan's easement adjacent to SD Pipelines 1 and 2. EMWD's use of Metropolitan's easement would require approval by Metropolitan and/or the sale/transfer of the easement from Metropolitan to EMWD. At the point 1,300 feet north of Newport Road, the pipeline would leave Metropolitan's easement and be located within the existing public right-of-way of the unpaved Patterson Avenue for another approximately 7,000 feet until it reaches Simpson Road. The new pipeline is anticipated to be welded steel pipe with cement-mortar lining and coating.

1.2.6 Phase 4

The final phase, Phase 4, consists of installing a new pipeline parallel to the portions of SD Pipeline 1 or 2 relined during Phase 1 (from the BPS to Fowler Drive) and Phase 2 (from Fowler Drive to Holland Road) to increase the transmission pipeline capacity from 40 to 140 cfs. The parallel pipe from the BPS to Fowler Drive would be 60 inches in diameter and would be constructed within Metropolitan's existing easement. Between Fowler Drive and Holland Road, the parallel pipe would be 48 inches in diameter and would also be constructed within Metropolitan's existing easement. EMWD's use of Metropolitan's easement would require approval by Metropolitan and/or the sale/transfer of the easement from Metropolitan to EMWD. The new pipeline is anticipated to be welded steel pipe with cement-mortar lining and coating. Both the new pipeline installed during Phase 4 and the pipeline relined during Phase 2 (which would be parallel to each other) would connect to the 60-inch-diameter pipeline installed during Phase 3 at a single location at Holland Road using a manifold (i.e., a larger pipe section into which smaller pipes lead).

It is assumed that capacity would no longer be available in the Auld Valley Pipeline at Phase 4 of the Project and that a new 72-inch-diameter pipeline would be installed within Borel Road and Auld Road, connecting the new turnout and BPS to the Skinner WTP. The new pipeline would function as the suction pipe for the BPS.

The minimum permanent easement or right-of-way width required for operation of the pipeline would be 60 feet. Where the pipeline would be constructed outside or at the edge of the public right-of-way, attempts shall be made to provide approximately 30 feet on either side of the pipeline.

Pipeline appurtenances would be required for the proper operation and maintenance of the transmission pipelines.

1.3 ALTERNATIVE ALIGNMENT DESCRIPTION

EMWD considered several potential routes for the Project; one of those routes was called the Non-Metropolitan Alternative (Figure 3, *Non-Metropolitan Alternative Alignment*). The Non-Metropolitan Alternative route starts and ends at the same location as the selected route (route 5D). The Non-Metropolitan Alternative route travels south along Leon Road for three quarters of a mile where it crosses Salt Creek and continues south along or adjacent to Leon Road for another 1.2 miles until it turns east on Ano Crest Road. The alignment follows Ano Crest Road for 0.25 mile where it turns south on Eucalyptus Road for 1.5 miles. Both Ano Crest Road and Eucalyptus Road were undeveloped dirt roads at the time of the 2022 assessment. A portion of Eucalyptus Road is subject to potential development related to ongoing residential construction occurring adjacent to the alignment. The alignment then continues south for approximately 0.8 mile over undeveloped land to Pines Airpark Road, where it continues south for 0.3 mile to Scott Road. At Scott Road, the alignment turns east for approximately 0.35 mile where it turns south and traverses undeveloped land for 0.5 mile. Then it continues south on Pourroy Road for approximately one mile. The first half mile of Pourroy Road is an undeveloped dirt road, and the second half mile includes a slight turn to the southeast. At the end of Pourroy Road, the alignment crosses Winchester Road and extends toward the southeast on Abelia Street for 1.5 miles until it turns south on Washington Street extending for another 1.5 miles. The alignment then turns west on Auld Road for approximately 0.1 mile to the end of the alignment. Near the end of the alignment west of Washington Street and north of Auld Road, the alternative includes a proposed pump station.

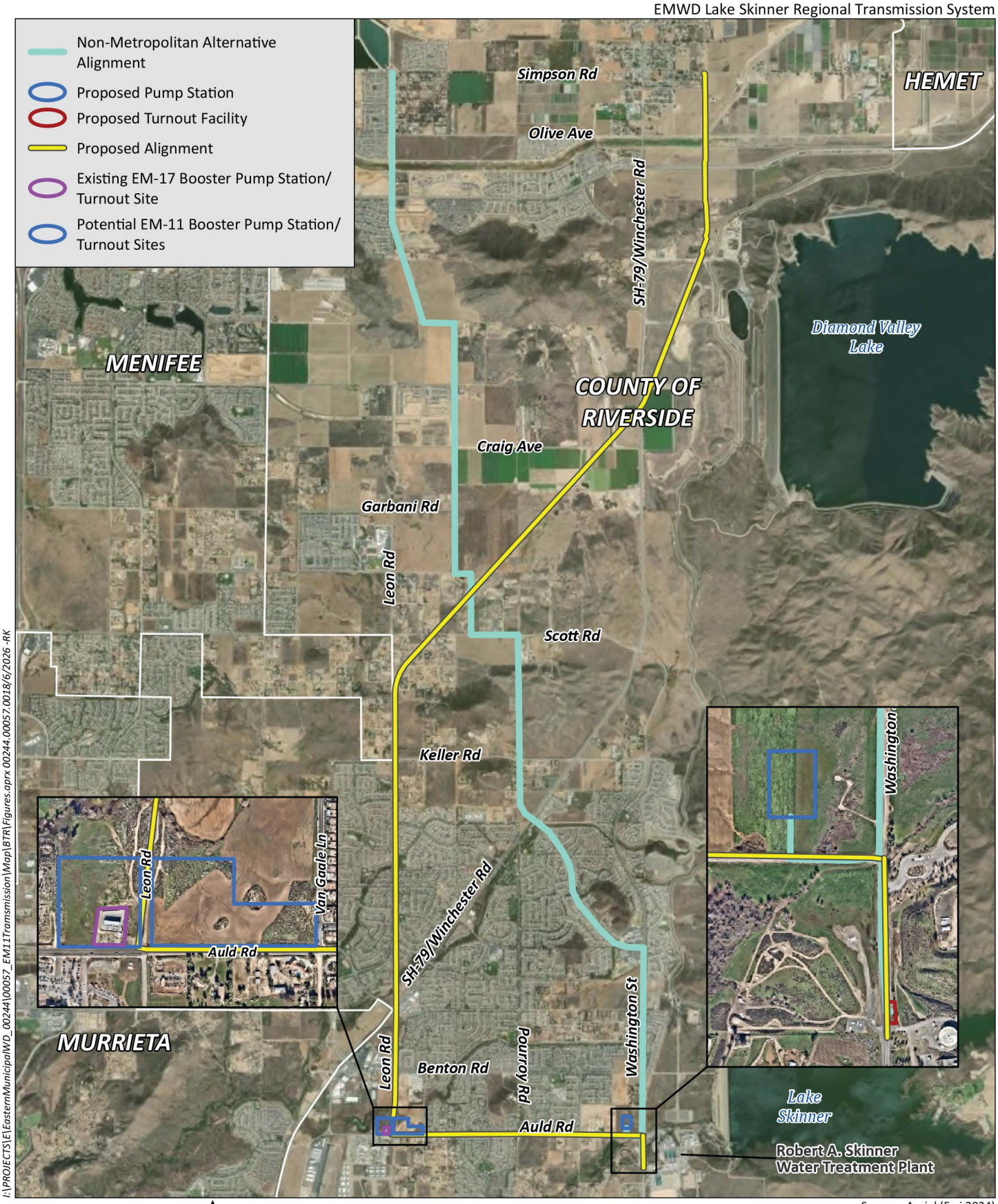
2.0 METHODS

Project evaluation included a desktop review of existing information and field surveys. The methods used to evaluate the biological resources present within the study area are discussed in this section.

2.1 LITERATURE REVIEW

Prior to conducting biological field surveys, HELIX conducted a thorough review of relevant maps, databases, and literature pertaining to biological resources known to occur within the study area. Recent and historical aerial imagery, U.S. Geological Survey (USGS) topographic maps, soils maps (Natural Resource Conservation Service [NRCS] 2019), and other maps of the study area and vicinity were acquired and reviewed to obtain updated information on the natural environmental setting (Figure 4, *Aerial Photography – Overview* and Figures 4a-o, *Aerial Photography*).

In addition, a query of special-status species and habitats databases was conducted, including the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) plant database (CDFW 2025a), the Rarefind database (CDFW 2025b), the Calflora database (Calflora 2025), and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2025a). The U.S. Fish and Wildlife Service's (USFWS's) National Wetlands Inventory (NWI; USFWS 2025a) and data pertaining to the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) were also reviewed.



Source: Aerial (Esri 2024)

HELIX Environmental Planning

Non-Metropolitan Alternative Alignment

Figure 3

Study Area
Proposed Alignment
Existing EM-17 Booster Pump Station/Turnout Site
Potential EM-11 Booster Pump Station/Turnout Sites
Detail Sheet Boundaries of Figure 4a - o and Figures 5a - o

Simpson Rd
Olive Ave
SH-79/Winchester Rd
Diamond Valley Lake
Craig Ave
Garbani Rd
Leon Rd
Scott Rd
Keller Rd
SH-79/Winchester Rd
Leon Rd
Benton Rd
Pourroy Rd
Washington St
Auld Rd
Lake Skinner

a b c d e f g h i j k l m n o

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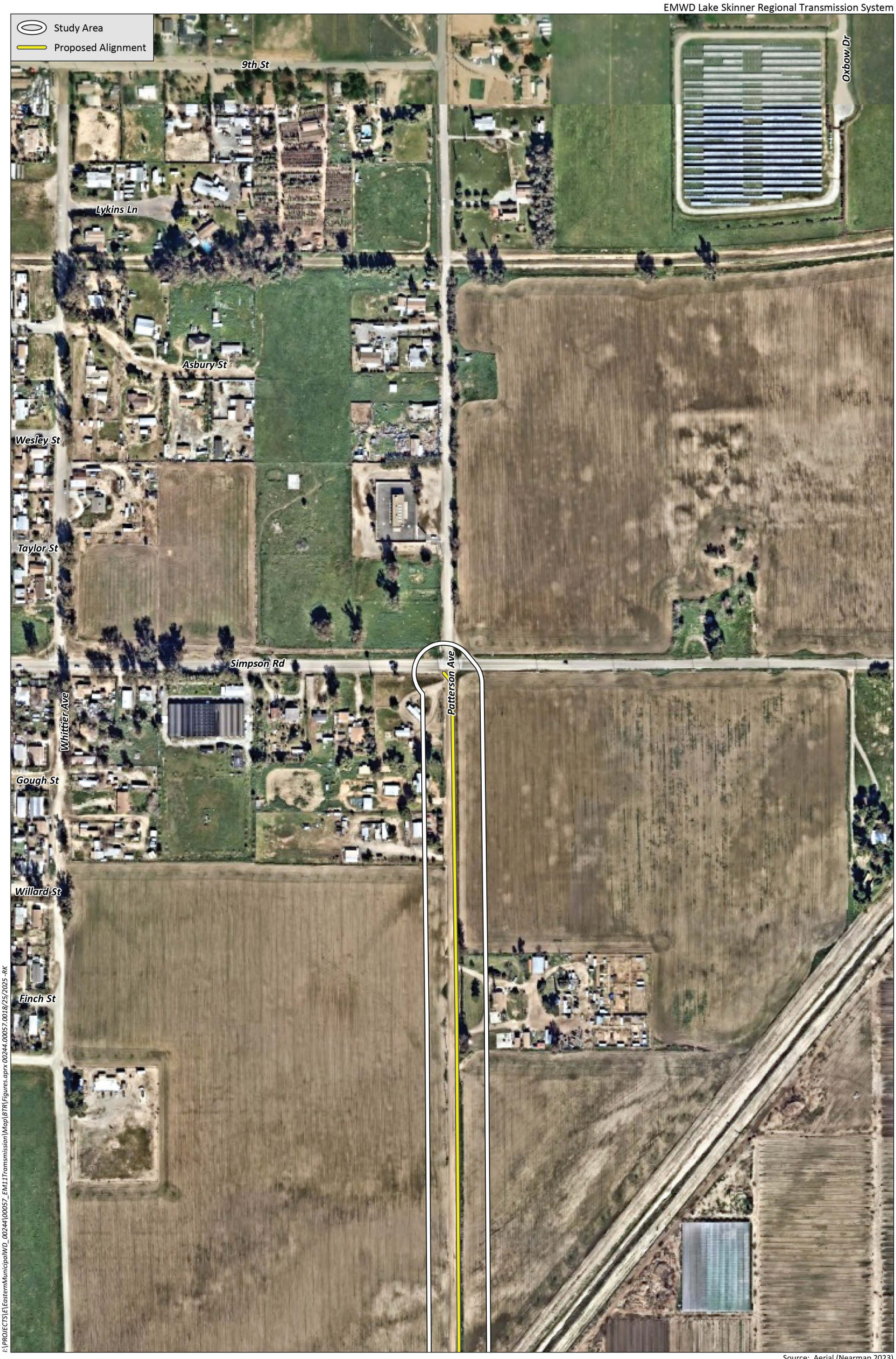
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Source: Aerial (Esri 2024)

HELIX Environmental Planning

Aerial Photography - Overview

Figure 4



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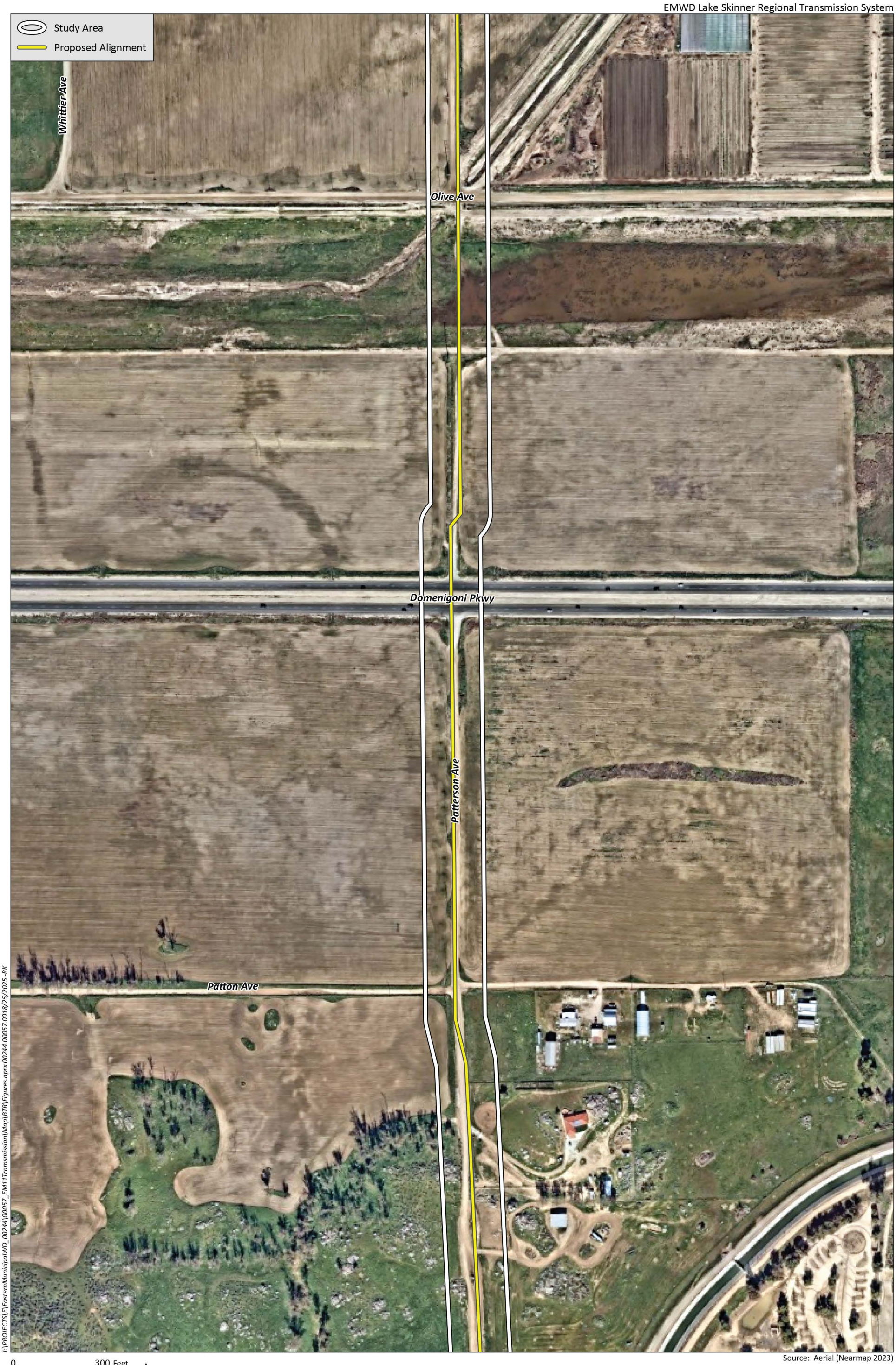
Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Aerial Photography

Figure 4a



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Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4b

Study Area
Proposed Alignment

Patterson Ave

E Newport Rd

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Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4c

EMWD Lake Skinner Regional Transmission System

Study Area
Proposed Alignment

SH-79/Winchester Rd

Holland Rd

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Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4d



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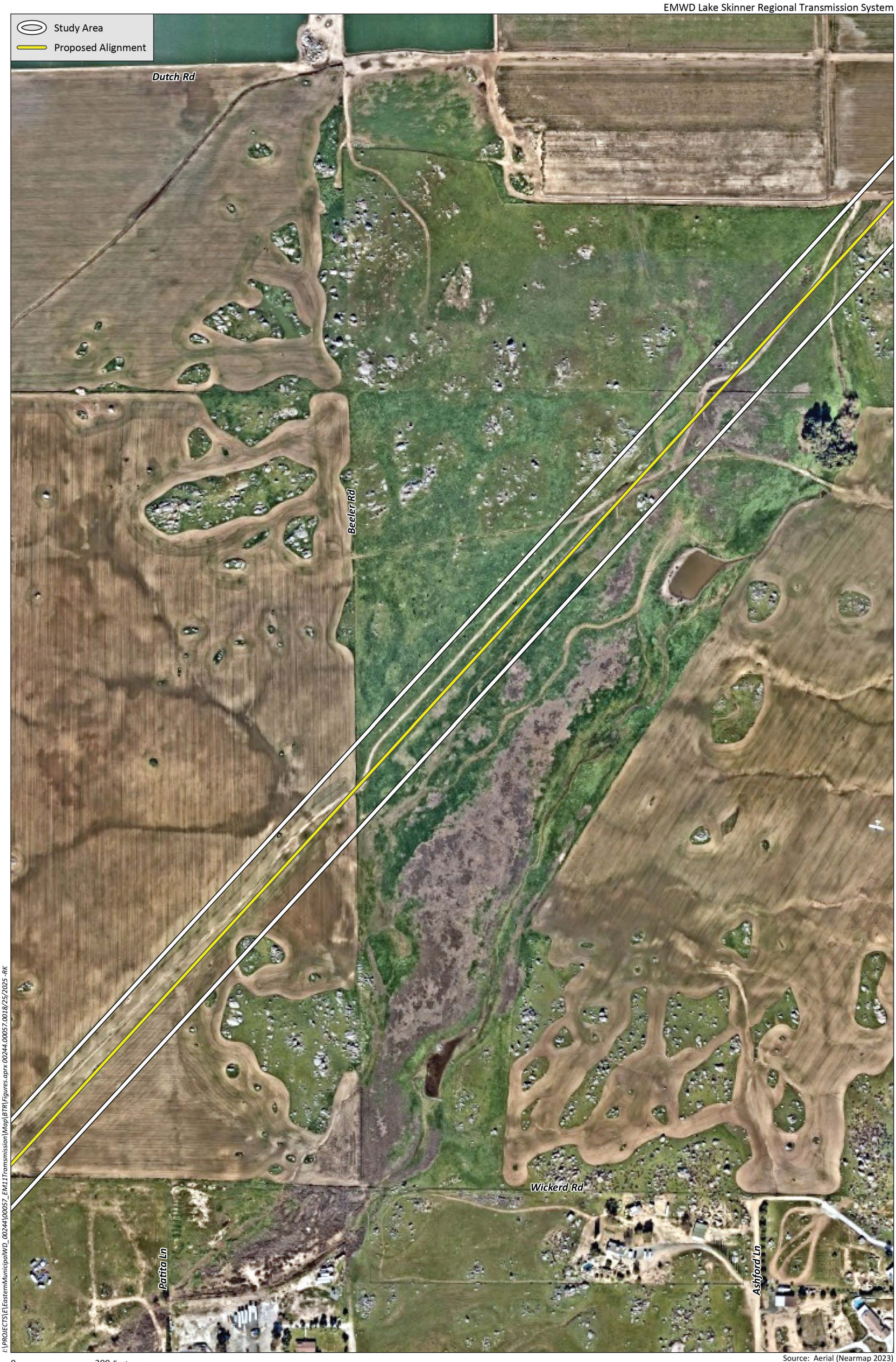
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Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4e



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Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4f



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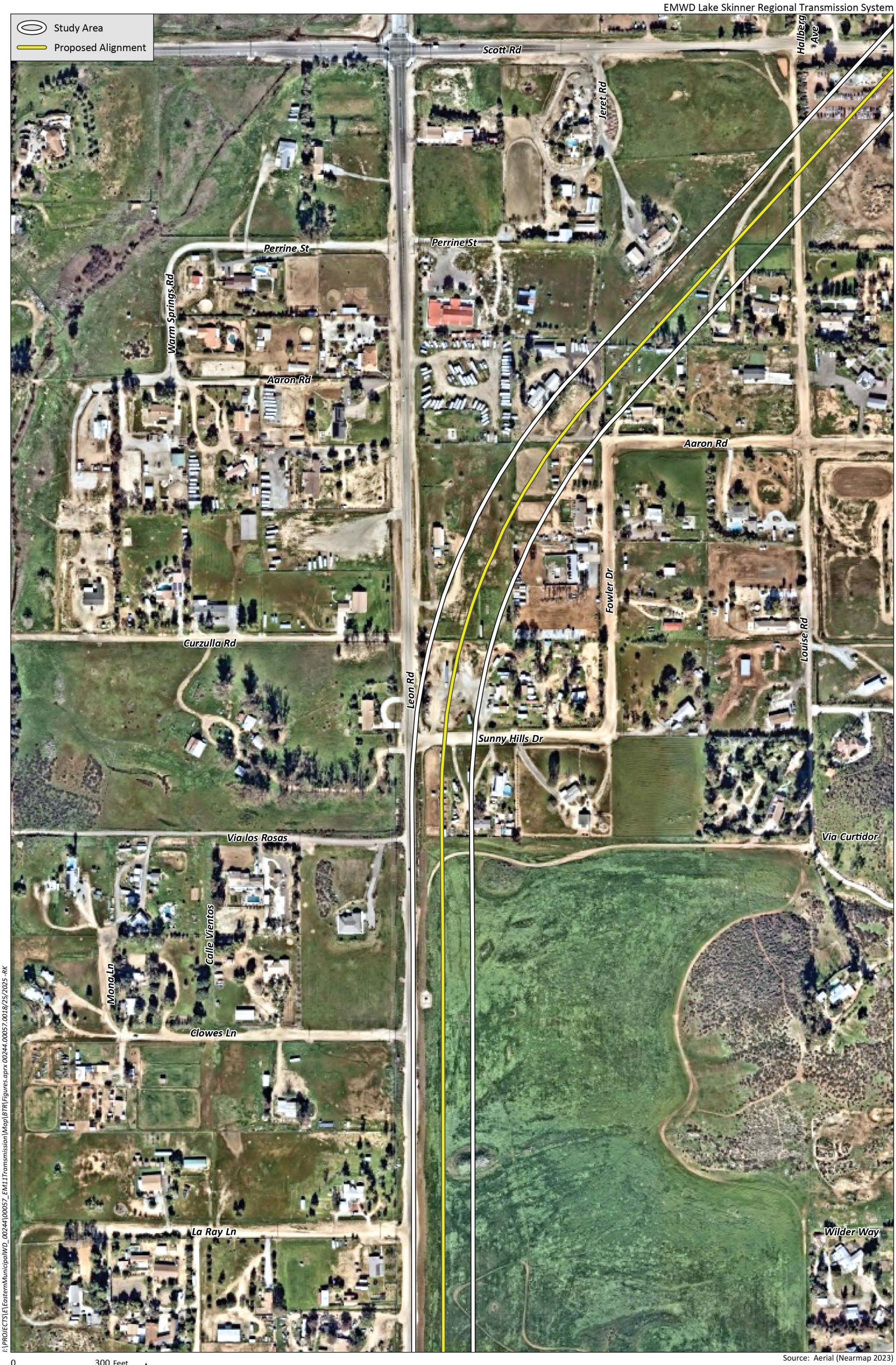
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Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4g



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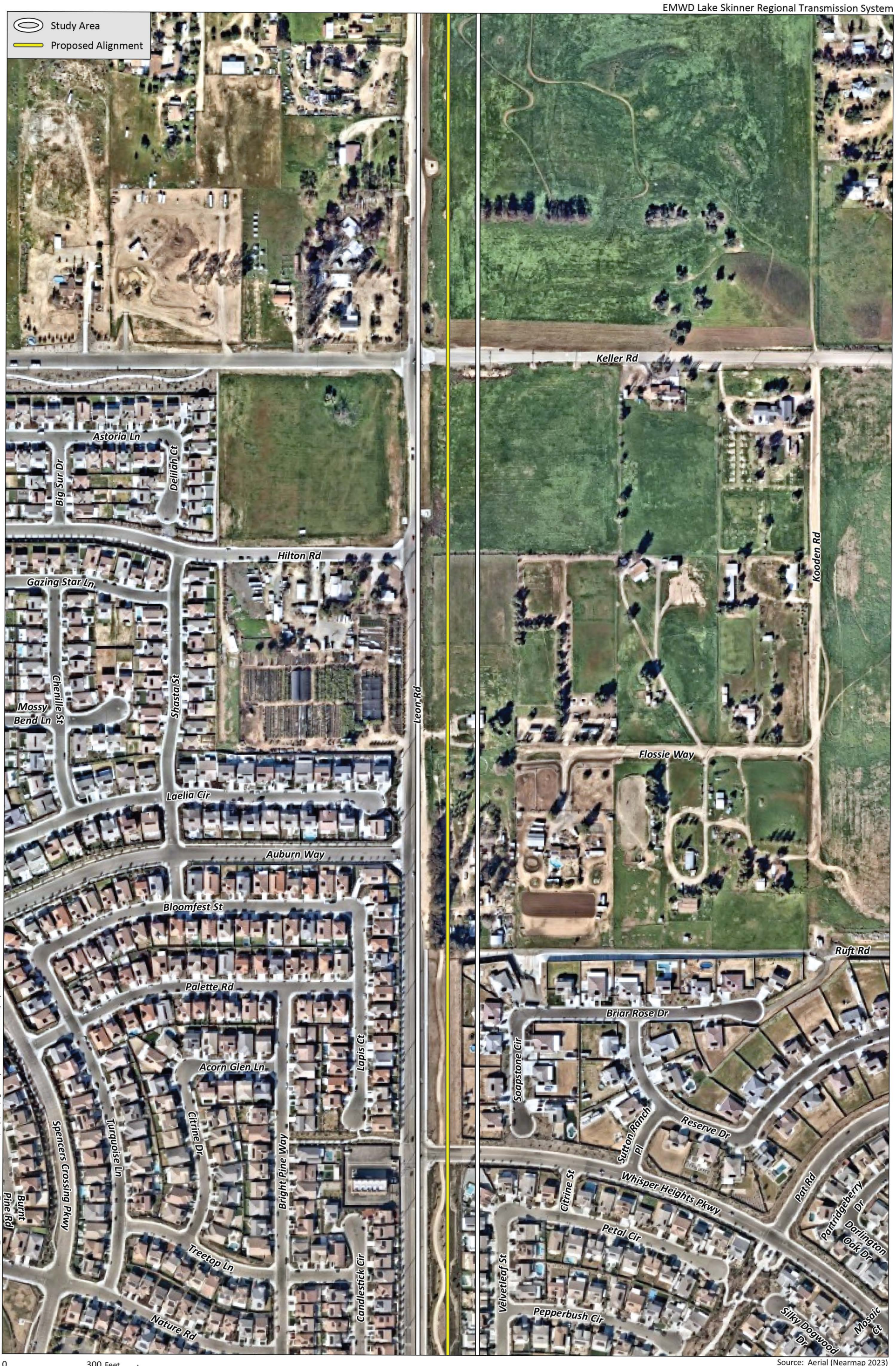
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Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4h



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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4i

Study Area
Proposed Alignment

Nature Rd
Bright Pine Way
Candlestick Cir
Spencers Crossing
Falling Star Pl
Silky Lupine Dr
Midnight Moon Ln
Windrow Rd
Yellow Pine Rd
Ribbon Grass Way
Myoporum Ln
Serissa Ct
Fescue Way
Red Spruce St
Bristly Ct
Skyflower Dr
Windflower Ln
Twinspur Dr
Leon Rd
Baxter Rd
Snowberry Ln
Indian Grass Dr
Thimbleberry Ln
Speargrass Ct
Wheatgrass Dr
Bluestem Dr
Goldthread Ln
Crocus Dr
Prairie Sun Way
Dropseed Dr
Roselle St
Olympia Rose Dr
White Clover Ct
Evening Glow Dr
Mayapple Ct
Stonecrop Ct
Summerholly Ln
Bush Clover Way
Lantana Way
Starfire Cir
Sugar Maple St
Suncatcher St
Bola Ct
Pepperbush Cir
Velvetleaf St
Catania Cir
Silky Dogwood Dr
Mosaic Ct
Windstone Dr
Yellow Root Ct
Branches Cir
Armstrong Rd
Sweet Bells Dr
Spice Bush Cir
Koodan Rd
Cookie Rd
Branding Iron Ct
Ryanside Ct
Pinon Pine Cir
Jean Nicholas Rd
Condor Dr
Kestrel Way
Lone Hill Ct
Pintail Way
Nightingale St
Trumpeter Ln
Flamingo Way
Slater Ave
Quail Garden Ct
Peregrine Way
Janelle Ln
Azalea Cir
Bell Cir
Saguaro Dr
Dogwood Cir
Euclid Loop
Bermuda St

0 300 Feet

Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Aerial Photography

Figure 4j



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Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4k

Study Area
Proposed Alignment
Existing EM-17 Booster Pump Station/Turnout Site
Potential EM-11 Booster Pump Station/Turnout Sites

Huntsman Ct
Leeds St
Breitner Way
Brussels St
Rhine Ct
Via Tierra
Del Ray
Calle Caparica
Amsterdam Rd
Leon Rd
Via Quinta Do Reyes
Calle Sagres
Calle Benavente
Calle Lisbon
Calle Grandola
Erica Ct
Cognac St
Calle Cercal
Temeku St
Benton Rd
Penfield Ln
Ermitage Ln
Pomerol Loop
Van Gaale Ln
Auld Rd
Leon Rd

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4l

Study Area
Proposed Alignment
Potential EM-11 Booster Pump Station/Turnout Sites

Golden Willo
Avocado Ct
Pepper Tree St
Persimmon Cir
Bottle Brush St
Olive Tree Ct
Silk Tree Ct
Sumac St
Beech St
Cottonwood St
Silex Ct
Live Oak Cir
Filbert St
Red Oak St
Willow Cir
Sauterne St
Cheval Dr
Hidden Trail Ct
Cristal Ct
Pomerol Loop
Blanc Ct
Auld Rd
Whispering Hills Dr
Cloverhill Way
Running Springs Rd
Sierra Grove Dr
Wildoak Dr
Fallbrook Cir
Avocet Way
Shadetree Dr
Edgemont Dr
Rose Hill Cir
Tree Ridge Dr
Stoyview Cir
Wintergreen Way
Almond Cir
Harvest Dr
High Vista Dr
Apple Gate Rd
Van Gaale Ln

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4m

Study Area
Proposed Alignment

Armoise Dr
Caden Ct
Maddalena Rd
Tulle Rd
Deauville Rd
Montfleury Ln
Saint Martin St
Renoir Rd
Limoges St
Picasso Ct
Perigord Rd
Duclair Rd
Montreaux Rd
Cady Rd
Chantecler Rd
Rancho Kiel Rd
Santoro Way
Pourroy Rd
Pebley Ct
Auld Rd
Dickson Path
Golden Willow Ct
Avocado Ct
Pepper Tree St
Pourroy Rd
Whispering Hills Dr
Cloverhill Way
Running Springs Rd
Fallbrook Cir
Sierra Grove Dr
Wildoak Dr

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Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4n



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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Aerial Photography

Figure 4o

2.2 BIOLOGICAL SURVEYS

2.2.1 General Biological Survey

HELIX biologists Robert Hogenauer and Kacee Morell conducted a general biological survey of the study area on March 2, 2023. Rare plant surveys and a preliminary aquatic resource delineation were also conducted by HELIX in 2023 (Table 1 *Biological Surveys for the Project*). Mr. Hogenauer also conducted an additional survey for the proposed pump station location on March 16, 2025 (Table 1*t*). The 310.78-acre study area includes the proposed turnout facility, booster pump station, the transmission pipeline alignment, detention basin, pipeline appurtenances, and a 100-foot buffer. Vegetation communities within the study area were mapped on an aerial photograph (1"=150' scale).

Vegetation communities present within the study area were mapped based on the Holland (1986)/Oberbauer et al. (2008) classification system and are cross-referenced to the Manual of California Vegetation, 2nd Edition (MCV; Sawyer et al. 2009) where feasible. Direct translations between Holland and MCV do not exist for all vegetation types. Additionally, a single vegetation community under Holland may fit the definition of several different alliances or associations described within the MCV. Vegetation communities mapped within the study area using Holland were translated to the equivalent classification unit under MCV in order to determine sensitivity rankings. For communities that do not have direct translations within MCV, professional judgment was used to find the best corresponding association or alliance. A minimum mapping unit size of 0.1 acre was used when mapping upland habitat; 0.01 acre was used when mapping wetland and riparian habitat. A list of all plant and animal species observed or detected within the study area was prepared. Plant species were identified in the field. Animals were identified in the field by direct visual observation with the aid of binoculars or indirectly by detection of calls, tracks, burrows, or scat.

Potentially jurisdictional aquatic resources evaluated within the study area include drainage features, depressions, and/or wetland vegetation that crossed or were adjacent to the study area and were mapped in the field; however, a formal aquatic wetland delineation was not performed by HELIX as the Project intends to avoid jurisdictional drainage features.

Table 1
BIOLOGICAL SURVEYS FOR THE PROJECT

Survey Date	Personnel	Survey Conducted
March 2, 2023	Rob Hogenauer Kacee Morrell	Vegetation Mapping and Habitat Assessment
March 28, 2023	Dan Torres Chase Taylor	Rare Plant
March 29, 2023	Dan Torres Cache Tucker	Rare Plant
April 5, 2023	Dan Torres Taylor Chase	Rare Plant
May 11, 2023	Rob Hogenauer	Aquatic Resource Delineation
May 18, 2023	Dan Torres Taylor Chase	Rare Plant Assessment for Summer Blooming Species
May 26, 2023	Rob Hogenauer	Aquatic Resource Delineation
June 1, 2023	Rob Hogenauer	Aquatic Resource Delineation

Survey Date	Personnel	Survey Conducted
June 12, 2023	Dan Torres Cache Tucker	Rare Plant Survey
May 16, 2025	Rob Hogenauer	Updated Vegetation Mapping, Habitat Assessment, and Aquatic Resource Delineation (pump station only)

2.3 RARE PLANT SURVEYS

HELIX biologists Dan Torres, Taylor Chase, and Cache Tucker combined to conduct a two-day spring rare plant survey on March 28 and 29, 2023 (see Table 1). The survey consisted of walking through undeveloped areas of the study area. Areas not surveyed include roads, residential areas, and maintained landscaped habitat.

2.4 AQUATIC RESOURCE DELINEATION

HELIX biologist Rob Hogenauer conducted a preliminary aquatic resource delineation on May 11, May 26, and June 1, 2023, along with additional desktop analysis for the middle reach for which access had not been granted. An additional visit was conducted on May 16, 2025, for the pump station location. Mr. Hogenauer conducted a preliminary analysis of aquatic resources that may occur along the Project alignment during the March 2, 2023, habitat assessment and again on May 16, 2025, for the proposed pump station location. The purpose of the preliminary aquatic resource delineation is to map the extent of potential jurisdictional features to guide avoidance. The waters are regulated by the USACE, RWQCB, and CDFW collectively referred to as the regulatory agencies.

2.5 SURVEY LIMITATIONS

Not all areas of the proposed Project alignment were available to be surveyed on foot due to access restrictions. Permission to walk the reach of the proposed alignment from the intersection of Newport Road and Patterson Avenue south to Pines Airpark Road was not obtained. Consequently, this reach was accessed via binoculars where possible and via a desktop analysis. A binocular and desktop analysis was also used for portions of the Project alignment that crossed private residential lands such as those in proximity to Scott Road.

Noted animal species were identified by direct observation, vocalizations, or the observance of scat, tracks, or other signs. However, the lists of species identified are not necessarily comprehensive accounts of all species that utilize the study area, as species that are nocturnal, secretive, or seasonally restricted may not have been observed. Those species that are of special status and have potential to occur in the study area are addressed in this report. Additionally, as stated above, a portion of the Project alignment was not available for ground surveys and additional resources could occur in those areas that were not detectable via a desktop analysis.

2.6 NOMENCLATURE

Nomenclature for this report is taken from the Manual of California Vegetation (CNPS 2025b), Holland (1986), and Oberbauer et al. (2008) for vegetation communities; Jepson eFlora (2025) and Baldwin et al. (2012) for plants; North American Butterfly Association (2025) for butterflies; Society for the Study of Amphibians and Reptiles (2025) for reptiles and amphibians; American Ornithological Society (2024) for

birds; and Bradley et al. (2014) for mammals. Plant species status is from the CNPS Rare Plant Inventory (2025a) and CDFW (2025a). Animal species status is from the CDFW (2025c).

3.0 EXISTING CONDITIONS

3.1 GENERAL LAND USES

The area is characterized by a combination of developed land with areas of undisturbed, native habitat (Figures 5a-o, *Vegetation and Sensitive Resources/Land Use*). Areas occupied with native habitat comprise less than three percent of the study area and consist of predominately California buckwheat scrub and a few small riparian habitats. Land uses that characterize the study area and surrounding area include agricultural fields, transportation infrastructure, rural residential, and residential developments that exist or are currently under construction.

USFWS-designated critical habitat occurs near the study area for three species. Critical habitat for coastal California gnatcatcher (*Polioptila californica californica*; CAGN) occurs approximately one-quarter mile east of the alignment and one-half mile to the west in the vicinity of Diamond Valley Lake, critical habitat for Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) occurs just over one-quarter mile south of the alignment, and critical habitat for spreading navarretia (*Navarretia fossalis*) occurs approximately 1.5 miles west of the Project alignment (Figure 6, USFWS *Critical Habitat*).

3.2 TOPOGRAPHY AND SOILS

The study area is located within the eastern portion of the Perris Block in the Peninsular Ranges Geomorphic Province of Southern California. The Peninsular Ranges Geomorphic Province consists of a series of northwest-trending mountain ranges and valleys bounded on the north by the San Bernardino and San Gabriel Mountains, on the west by the Los Angeles Basin, and on the south by the Pacific Ocean. The Perris Block is a relatively stable structural block bounded by the active Elsinore and San Jacinto fault zones to the west and east, and the Chino and Temecula basins to the north and south.

Topography within the province is generally characterized by broad alluvial valleys separated by linear mountain ranges. This northwest-trending linear fabric was created by the regional faulting within the granitic basement rock of the Southern California Batholith. Broad, linear, alluvial valleys have been formed by erosion of these principally granitic mountain ranges.

The local geology in the study area is a complex mixture of hills comprised of resistant bedrock and valleys that have been gradually infilled by sediments eroded from nearby and distant mountains. Alluvial units range from young to very old deposits. Bedrock units are exposed at the surface in many places throughout the study area and consist of igneous and metamorphic bedrock types.

The study area includes 55 soil types belonging to 27 soil series (Figures 7a-o, *Soils;* Appendix A; *Soil Types*).

3.3 VEGETATION COMMUNITIES

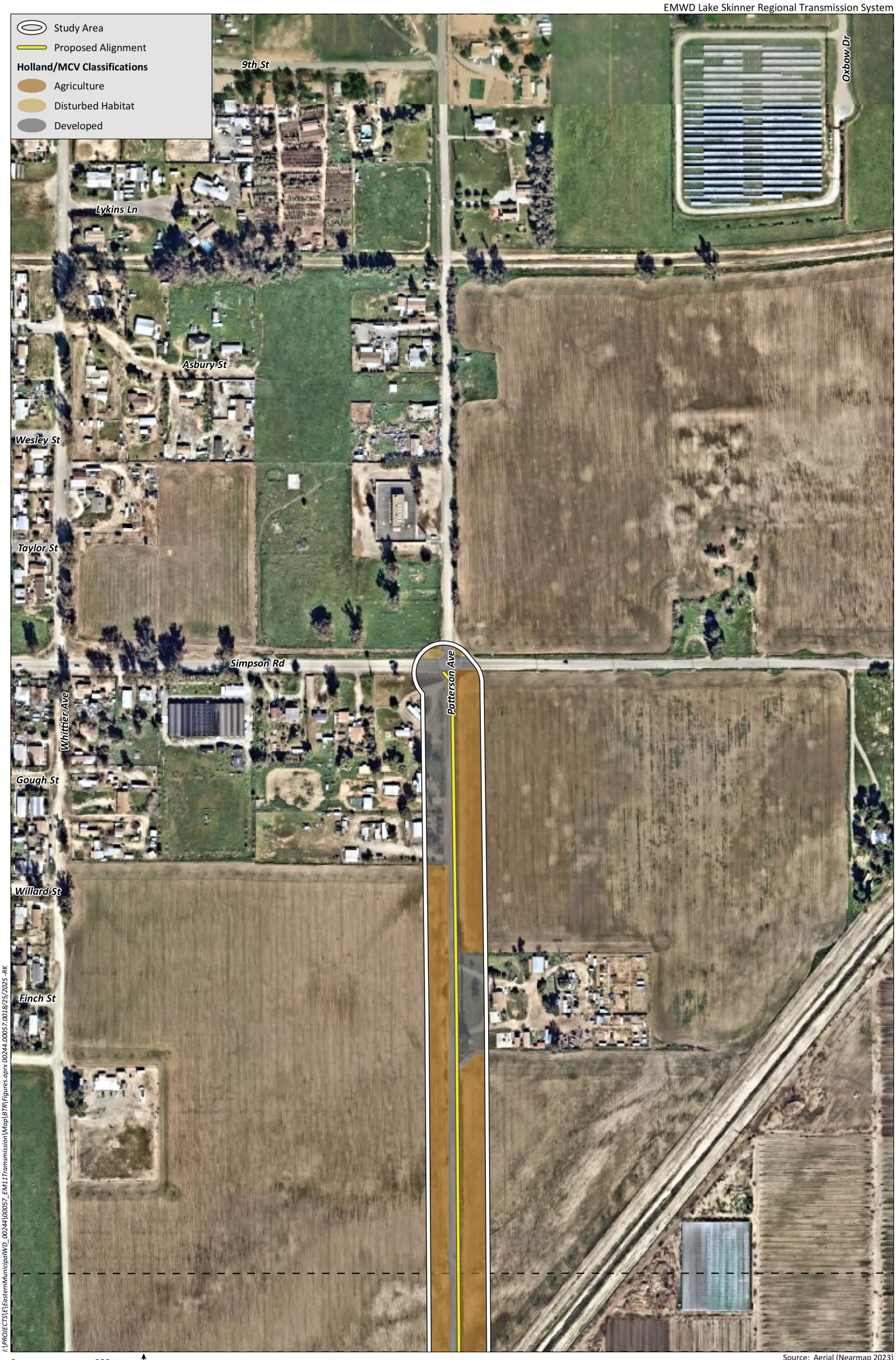
Vegetation communities present within the study area were mapped based on the Holland/Oberbauer classification system and cross-referenced to the MCV where feasible. Field biologists identified 14 plant

alliances, associations, semi-natural stands present, or land uses within the study area as follows: mule fat thickets, Goodding's willow-red willow riparian woodland and forest, disturbed wetland, cattail marsh, tamarisk scrub, basin/pool, open water, California buckwheat scrub, eucalyptus-tree of heaven-black locust groves, wild oat and annual brome grasslands (non-native grassland), disturbed habitat, developed, and agriculture. (Table 2, *Vegetation Communities and Land Covers*; Figures 5a-o). Five of the communities are not described by the MCV and are described using the Holland/Oberbauer code distribution. A brief description of each community within the study area is provided below.

Table 2
VEGETATION COMMUNITIES AND LAND COVERS[1]

CDFW CA Code	MCV Alliance/ Association	MCV Common Name	Holland Code[2]	Holland Classification	Acres on Site[3]
Riparian Vegetation					
63.510	*Baccharis salicifolia* Shrubland Alliance	Mule fat thickets	63310	Mule fat scrub	0.72
61.216	*Salix Gooddingii – Salix laevigata* Forest & Woodland Alliance	Goodding's willow - Red willow riparian woodland and forest	63320	Southern willow scrub	0.50
N/A	N/A	N/A	11200	Disturbed wetland	1.72
52.050	*Typha* sp. Herbaceous Alliance	Cattail marsh	52410	Coastal and valley freshwater marsh	1.49
63.810	*Tamarix* spp. Shrubland Semi-Natural Alliance	Tamarisk thickets	63810	Tamarisk scrub	0.58
N/A	N/A	N/A	N/A	Disturbed swale	0.33
N/A	N/A	N/A	N/A	Basin/pool;[4]	0.59
N/A	N/A	N/A	N/A	Open water	0.63
				Subtotal	**6.56**
Upland Vegetation					
32.040	*Eriogonum fasciculatum* Alliance	California buckwheat scrub	37200	Riversidean sage scrub	10.30
79.100	*Eucalyptus* spp. – *Ailanthus Altissima-Robina pseudoacacia* Woodland Semi-Natural Alliance	Eucalyptus-tree of heaven-black locust Groves	79000	Non-native woodland	1.74
42.027	*Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance	Wild oats and annual brome grasslands	42200	Valley and foothill grassland; non-native grassland	88.48
42.013	*Brassica nigra-Centaurea* Herbaceous Semi-Natural Alliance	Upland mustards or star-thistle fields	42200	Non-native grassland	7.86
N/A	N/A	N/A	N/A	Disturbed habitat	38.42
N/A	N/A	N/A	N/A	Developed	115.16
N/A	N/A	N/A	N/A	Agriculture	42.17
				Subtotal	**304.13**
				Total	**310.69**

[1] The MCV does not classify general habitats such as these found in the Oberbauer updated Holland classification system: coastal sage scrub disturbed, disturbed habitat, developed, non-native grassland - disturbed, stream, agriculture, and basin.
[2] Vegetation categories and numerical codes are from Holland (1986) and Oberbauer et al. (2008).
[3] All habitats are rounded to the nearest 0.01 acre Includes acres for disturbed version of the specific habitat.
[4] Detention Basin is non-jurisdictional, pool may be jurisdictional



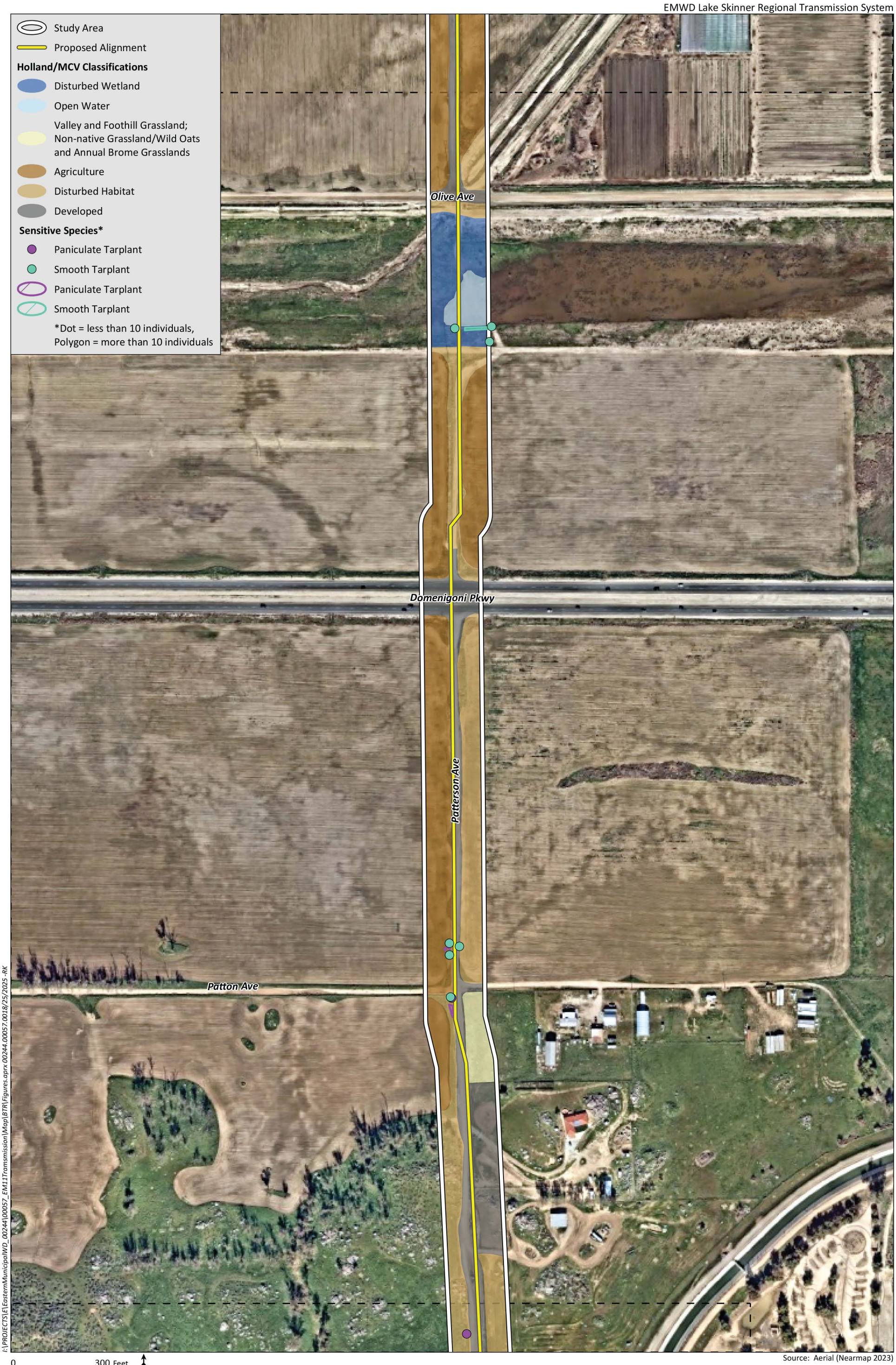
Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5a



Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5b

Study Area

Proposed Alignment

Holland/MCV Classifications

Pool

Valley and Foothill Grassland; Non-native Grassland/Wild Oats and Annual Brome Grasslands

Agriculture

Disturbed Habitat

Developed

Sensitive Species*

Paniculate Tarplant

Paniculate Tarplant

*Dot = less than 10 individuals, Polygon = more than 10 individuals

Patterson Ave

E Newport Rd

I:\PROJECTS\E\EasternMunicipalWD_00244\00057_EM11Tramsmission\Map\BTR\Figures.aprx 00244.00057.0018/25/2025 -RK

0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5c

Study Area

Proposed Alignment

Holland/MCV Classifications

Valley and Foothill Grassland; Non-native Grassland/Wild Oats and Annual Brome Grasslands

Non-native Woodland/ Eucalyptus Groves

Agriculture

Disturbed Habitat

Developed

SH-79/Winchester Rd

Holland Rd

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5d



0 300 Feet

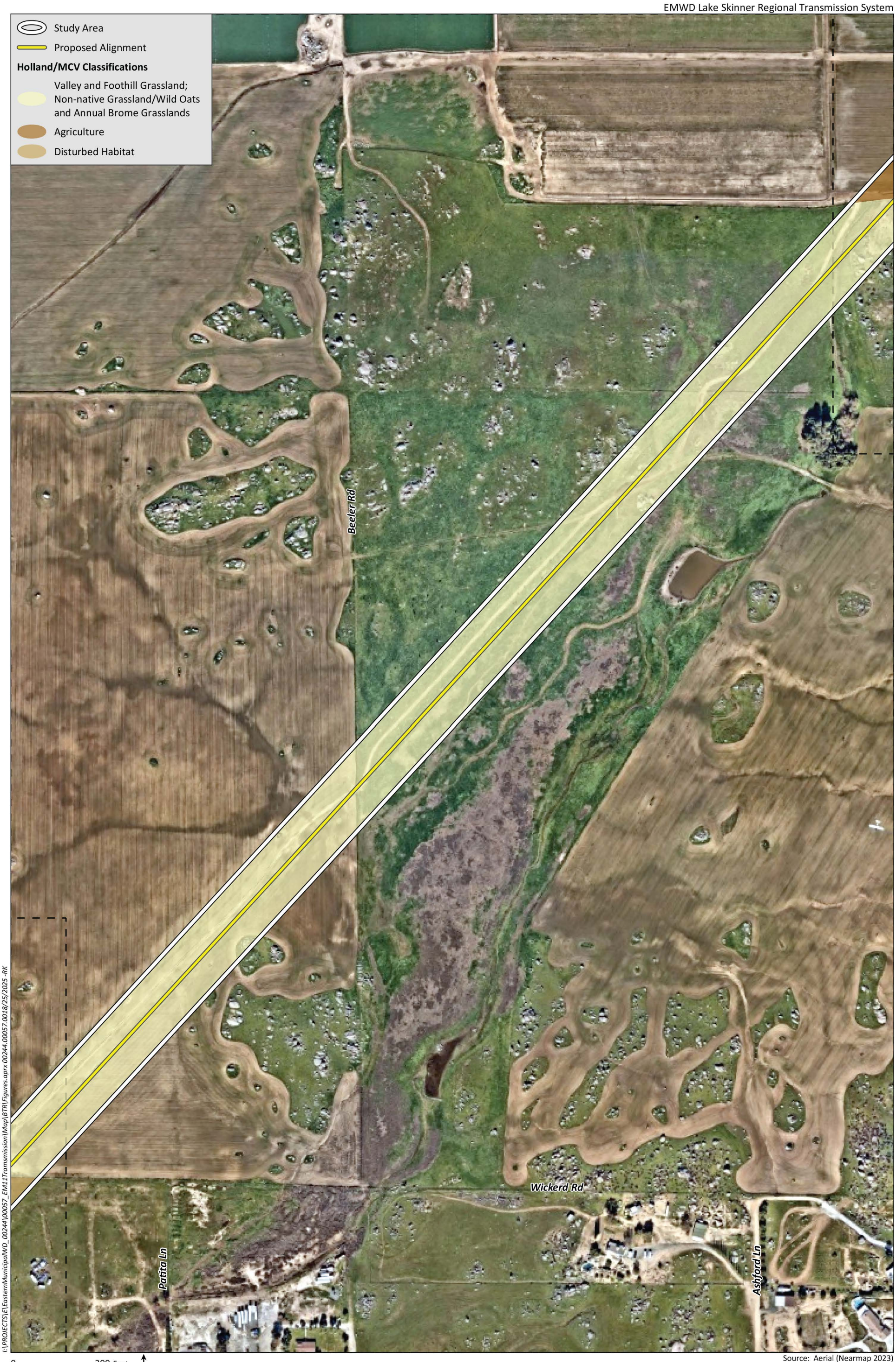
Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5e



Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5f

Study Area

Proposed Alignment

Holland/MCV Classifications

Pool

Riversidian Sage Scrub - Disturbed/California Buckwheat

Valley and Foothill Grassland; Non-native Grassland/Wild Oats and Annual Brome Grasslands

Disturbed Habitat

Developed

Eucalyptus Rd

Wickerd Rd

Flight Way

Davis Rd

Loretta Ave

Pines Airpark Rd

Scott Rd

Christine St

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0 300 Feet

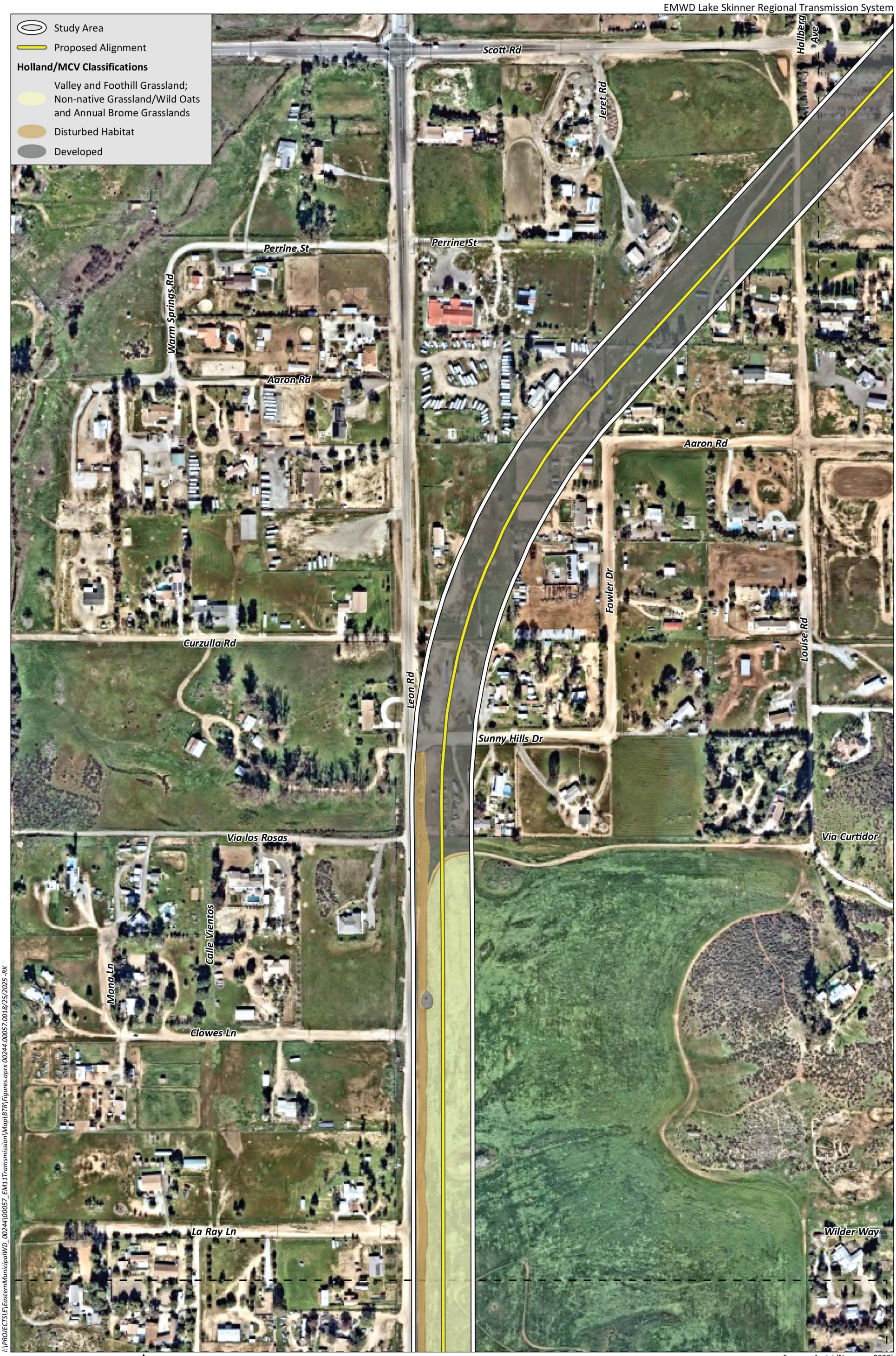
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Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5g



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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5h

Study Area

Proposed Alignment

Holland/MCV Classifications

Valley and Foothill Grassland; Non-native Grassland/Wild Oats and Annual Brome Grasslands

Non-native Woodland/ Eucalyptus Groves

Swale

Disturbed Habitat

Developed

Keller Rd

Astoria Ln

Big Sur Dr

Delilah Ct

Hilton Rd

Gazing Star Ln

Chenille St

Mossy Bend Ln

Shasta St

Leon Rd

Laelia Cir

Auburn Way

Bloomfest St

Palette Rd

Acorn Glen Ln

Citrine Dr

Lapis Ct

Bright Pine Way

Spencers Crossing Pkwy

Turquoise Ln

Burnt Pine Rd

Treetop Ln

Candlestick Cir

Nature Rd

Kooden Rd

Flossie Way

Ruft Rd

Briar Rose Dr

Soapstone Cir

Sutton Ranch Pl

Reserve Dr

Citrine St

Whisper Heights Pkwy

Pat Rd

Partridgeberry Dr

Darlington Oak Dr

Petal Cir

Velvetleaf St

Pepperbush Cir

Silky Dogwood Dr

Mosaic Ct

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5i

Study Area
Proposed Alignment
Holland/MCV Classifications
Developed

Spencers
Bright Pine Way
Candlestick Cir
Falling Star Pl
Silky Lupine Dr
Midnight Moon Ln
Windrow Rd
Yellow Pine Rd
Ribbon Grass Way
Myoporum Ln
Serissa Ct
Fescue Way
Red Spruce St
Bristly Ct
Skyflower Dr
Windflower Ln
Twinspur Dr
Baxter Rd
Leon Rd
Snowberry Ln
Indian Grass Dr
Thimbleberry Ln
Speargrass Ct
Wheatgrass Dr
Bluestem Dr
Goldthread Ln
Crocus Dr
Dropseed Dr
Prairie Sun Way
Roselle St
Olympia Rose Dr
White Clover Ct
Evening Glow Dr
Mayapple Ct
Stonecrop Ct
Summerholly Ln
Bush Clover Way
Suncatcher St
Sugar Maple St
Starfire Cir
Leon Rd
Pepperbush Cir
Silky Dogwood Dr
Mosaic Ct
Velvetleaf St
Catania Cir
Windstone Dr
Yellow Root Ct
Branches Cir
Armstrong Rd
Sweet Bells Dr
Spice Bush Cir
Koodem Rd
Cookie Rd
Branding Iron Ct
Ryanside Ct
Pinon Pine Cir
Jean Nicholas Rd
Condor Dr
Kestrel Way
Bola Ct
Lone Hill Ct
Pintail Way
Nightingale St
Trumpeter Ln
Flamingo Way
Slater Ave
Quail Garden Ct
Peregrine Way
Euclid Loop
Bermuda St
Bell Cir
Saguaro Dr
Dogwood Cir
Janelle Ln
Lantana Way
Azalea Cir

0 300 Feet

Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5j

Study Area

Proposed Alignment

Holland/MCV Classifications

- Herbaceous Wetland
- Coastal and Valley Freshwater Marsh/Cattail Marsh
- Mule Fat Scrub - Disturbed/Mule Fat Thickets
- Southern Willow Scrub/Red Willow Riparian Woodland and Forest
- Open Water
- Riversidean Sage Scrub/ California Buckwheat
- Valley and Foothill Grassland; Non-native Grassland/Wild Oats and Annual Brome Grasslands
- Tamarisk Scrub
- Disturbed Habitat
- Developed

Sensitive Species*

- Paniculate Tarplant
- Paniculate Tarplant

*Dot = less than 10 individuals, Polygon = more than 10 individuals

Starfire Cir
Golden Aster Ct
Pennycress Ln
Leon Rd
Hawkeye St
Swiftfox Ct
Bald Eagle St
Jack Rabbit Ln
Elk Ln
Brown Bear Dr
Cottontail Ln
Quail Run St
Max Gilliss Blvd
Leon Rd
Azalea Cir
Saguaro Dr
Navajo Way
Janelle Ln
Date Palm St
Driftwood St
Bonsai Cir
Blue Spruce Ln
Algarve Ave
Tulette Ln
Gabriel Metsu St
SH-79/Winchester Rd
Van Ruysdael Ln
Jan Steen Ct
Frans Hals Dr
Van Eyck Ct
Thompson Rd
Kiel Ct
Tarah Ct
Stirling Ct
Glasgow St
Leeds St
Troy Ln
Manford Dr
Florence Ct
Leon Rd
Breitner Way
Rhine Ct
Huntsman Ct
Brussels St

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5k

Study Area

Proposed Alignment

Holland/MCV Classifications

- Mule Fat Scrub - Disturbed/Mule Fat Thickets
- Southern Willow Scrub/Red Willow Riparian Woodland and Forest
- Pool
- Open Water
- Riversidian Sage Scrub - Disturbed/California Buckwheat
- Riversidean Sage Scrub/ California Buckwheat
- Valley and Foothill Grassland; Non-native Grassland/Wild Oats and Annual Brome Grasslands
- Upland Mustards or Star Thistle Fields/Upland Mustards or Star Thistle Fields
- Agriculture
- Disturbed Habitat
- Developed

Sensitive Species*

- Least Bell's Vireo
- Orange Throated Whiptail
- Paniculate Tarplant
- Smooth Tarplant
- Paniculate Tarplant

*Dot = less than 10 individuals, Polygon = more than 10 individuals

Huntsman Ct
Leeds St
Breitner Way
Brussels St
Rhine Ct
Via Tierra
Del Ray
Calle Caparica
Amsterdam Rd
Leon Rd
Via Quinta Do Reyes
Calle Sagres
Calle Benavente
Calle Lisbon
Calle Grandola
Erica Ct
Cognac St
Calle Cercal
Benton Rd
Ermitage Ln
Pomerol Loop
Van Gaale Ln
Auld Rd

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5l

Study Area

Proposed Alignment

Holland/MCV Classifications

Riversidean Sage Scrub/ California Buckwheat

Valley and Foothill Grassland; Non-native Grassland/Wild Oats and Annual Brome Grasslands

Non-native Woodland/ Eucalyptus Groves

Disturbed Habitat

Developed

Sensitive Species*

Orange Throated Whiptail

Paniculate Tarplant

*Dot = less than 10 individuals, Polygon = more than 10 individuals

Golden Willow Ct
Avocado Ct
Pepper Tree St
Persimmon Cir
Bottle Brush St
Olive Tree Ct
Silk Tree Ct
Sumac St
Beech St
Cottonwood St
Silex Ct
Live Oak Cir
Filbert St
Red Oak St
Willow Cir
Sauterne St
Cheval Dr
Hidden Trail Ct
Cristal Ct
Pomerol Loop
Blanc Ct
Auld Rd
Whispering Hills Dr
Cloverhill Way
Running Springs Rd
Sierra Grove Dr
Wildoak Dr
Fallbrook Cir
Avocet Way
Shadetree Dr
Edgemont Dr
Rose Hill Cir
Tree Ridge Dr
Stoyview Cir
Wintergreen Way
Almond Cir
Harvest Dr
High Vista Dr
Apple Gate Rd
Van Gaale Ln

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5m

Study Area
Proposed Alignment

Holland/MCV Classifications

Valley and Foothill Grassland; Non-native Grassland/Wild Oats and Annual Brome Grasslands
Agriculture
Disturbed Habitat
Developed

Caden Ct
Maddalena Rd
Tulle Rd
Deauville Rd
Montfleury Ln
Saint Martin St
Limoges St
Renoir Rd
Picasso Ct
Perigord Rd
Duclair Rd
Montreaux Rd
Auld Rd
Dickson Path
Cady Rd
Chantecler Rd
Rancho Kiel Rd
Pourroy Rd
Santoro Way
Pebley Ct
Golden Willow Ct
Avocado Ct
Pepper Tree St
Pourroy Rd
Whispering Hills Dr
Cloverhill Way
Running Springs Rd
Fallbrook Cir
Sierra Grove Dr
Wildoak Dr

0 300 Feet

Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5n

Study Area

Proposed Alignment

Holland/MCV Classifications

- Mule Fat Scrub/Mule Fat Thickets
- Southern Willow Scrub/Red Willow Riparian Woodland and Forest
- Disturbed Wetland
- Riversidian Sage Scrub/California Buckwheat - Disturbed
- Valley and Foothill Grassland; Non-native Grassland/Wild Oats and Annual Brome Grasslands
- Agriculture
- Disturbed Habitat
- Developed

Sensitive Species*

- California Horned Lark

*Dot = less than 10 individuals, Polygon = more than 10 individuals

Balmoral Ln
Moser Rd
Marius Ave
Washington St
Auld Rd
Borel Rd
Mazoe St
Rice Ln
Priscilla St
Herbsville Ct

0 300 Feet

Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Vegetation and Sensitive Resources/Land Uses

Figure 5o

- Study Area
- Proposed Alignment
- Existing EM-17 Booster Pump Station/Turnout Site
- Potential EM-11 Booster Pump Station/Turnout Sites

Critical Habitat

- Coastal California Gnatcatcher
- Quino Checkerspot Butterfly
- Spreading Navarretia

Simpson Rd
Olive Ave
SH-79/Winchester Rd
Craig Ave
Garbani Rd
Leon Rd
Scott Rd
Keller Rd
SH-79/Winchester Rd
Pourroy Rd
Benton Rd
Leon Rd
Washington St
Auld Rd
Maxer

0 3,500 Feet

Source: Aerial (Esri 2024)

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HELIX Environmental Planning

USFWS Critical Habitat

Figure 6

Study Area

Proposed Alignment

Soils

Domino silt loam, saline-alkali (Dv)

Exeter sandy loam, 0 to 2 percent slopes (EnA)

Exeter sandy loam, deep, 0 to 2 percent slopes (EpA)

Exeter sandy loam, deep, 2 to 8 percent slopes, eroded (EpC2)

Grangeville loamy fine sand, drained, 0 to 5 percent sl opes (GoB)

9th St

Oxbow Dr

Asbury St

Patterson Ave

Wesley St

Taylor St

Simpson Rd

Whittier Ave

Gough St

Willard St

Finch St

EpA

EnA

EpC2

GoB

Dv

0 300 Feet

Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Soils

Figure 7a

Study Area

Proposed Alignment

Soils

- Cieneba rocky sandy loam, 15 to 50 percent slopes, erod ed (CkF2)
- Domino fine sandy loam, saline-alkali (Dt)
- Domino silt loam, saline-alkali (Dv)
- Domino silt loam, strongly saline-alkali (Dw)
- Monserate sandy loam, 0 to 5 percent slopes (MmB)
- Monserate sandy loam, 5 to 8 percent slopes, eroded (MmC2)
- Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded (MnD2)
- Vista coarse sandy loam, 8 to 15 percent slopes, eroded (VsD2)
- Grangeville loamy fine sand, drained, 0 to 5 percent sl opes (GoB)
- Madera fine sandy loam, 0 to 2 percent slopes (MaA)

Olive Ave

Domenigoni Pkwy

Patton Ave

Patterson Ave

GoB

Dv

Dw

Dt

MaA

CkF2

VsD2

MmC2

MnD2

MmB

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Soils

Figure 7b

Study Area

Proposed Alignment

Soils

- Cieneba rocky sandy loam, 15 to 50 percent slopes, erod ed (CkF2)
- Domino fine sandy loam, eroded (Ds2)
- Domino fine sandy loam, saline-alkali (Dt)
- Exeter sandy loam, 0 to 2 percent slopes (EnA)
- Hanford coarse sandy loam, 2 to 8 percent slopes (HcC)
- Monserate sandy loam, 0 to 5 percent slopes (MmB)
- Monserate sandy loam, 5 to 8 percent slopes, eroded (MmC2)
- Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded (MnD2)
- Exeter sandy loam, deep, 2 to 8 percent slopes, eroded (EpC2)
- Madera fine sandy loam, 2 to 5 percent slopes, eroded (MaB2)



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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Soils

Figure 7c

Study Area

Proposed Alignment

Soils

- Domino fine sandy loam, eroded (Ds2)
- Domino fine sandy loam, saline-alkali (Dt)
- Domino silt loam, saline-alkali (Dv)
- Domino silt loam, strongly saline-alkali (Dw)
- Exeter sandy loam, deep, 2 to 8 percent slopes, eroded (EpC2)

EpC2
Ds2
Dt
Dw
Dv
Dv
Dv
Dw
Dv
Dv
SH-79/Winchester Rd
Holland Rd

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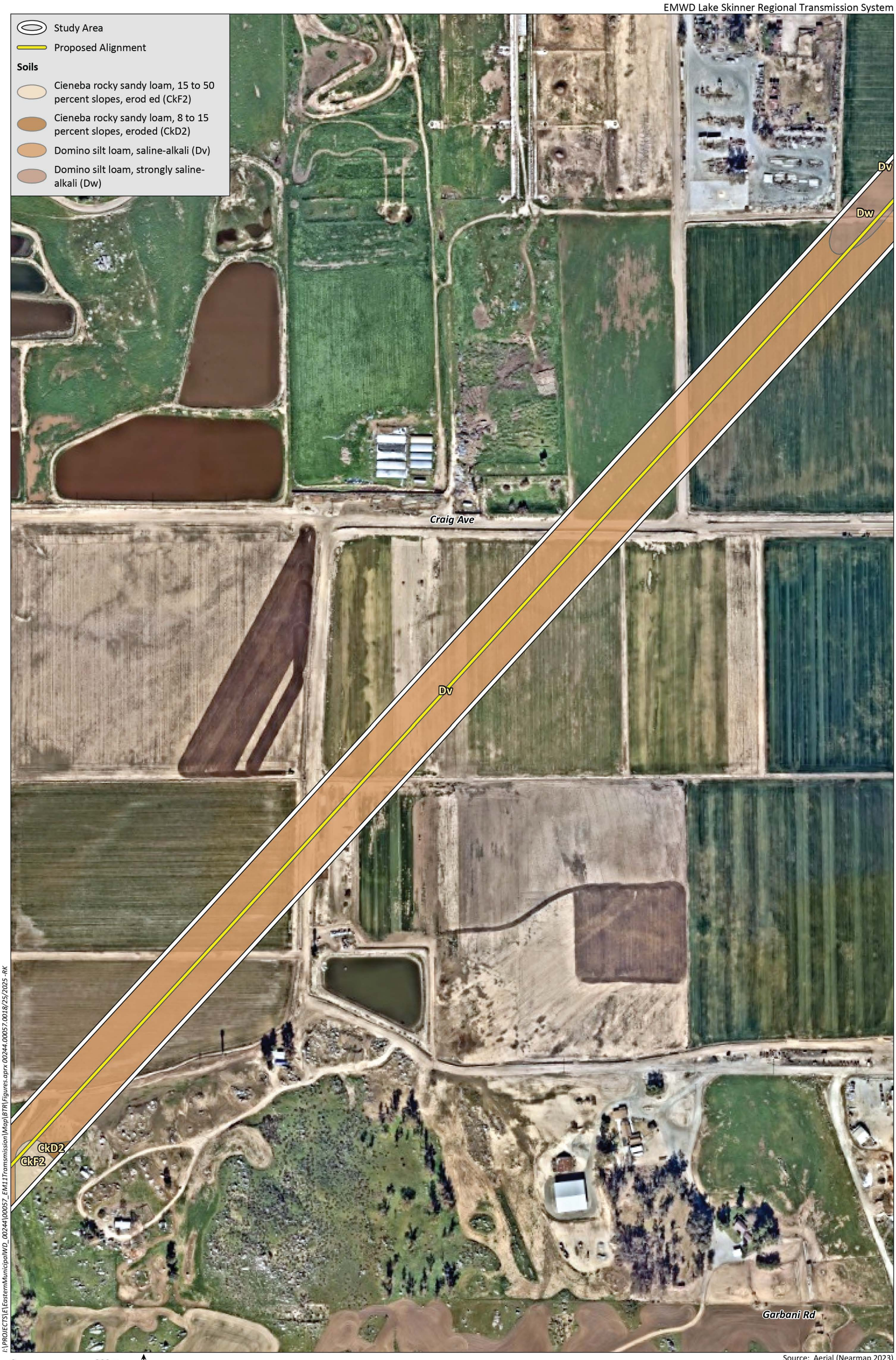
0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Soils

Figure 7d



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0 300 Feet

Source: Aerial (Nearmap 2023)

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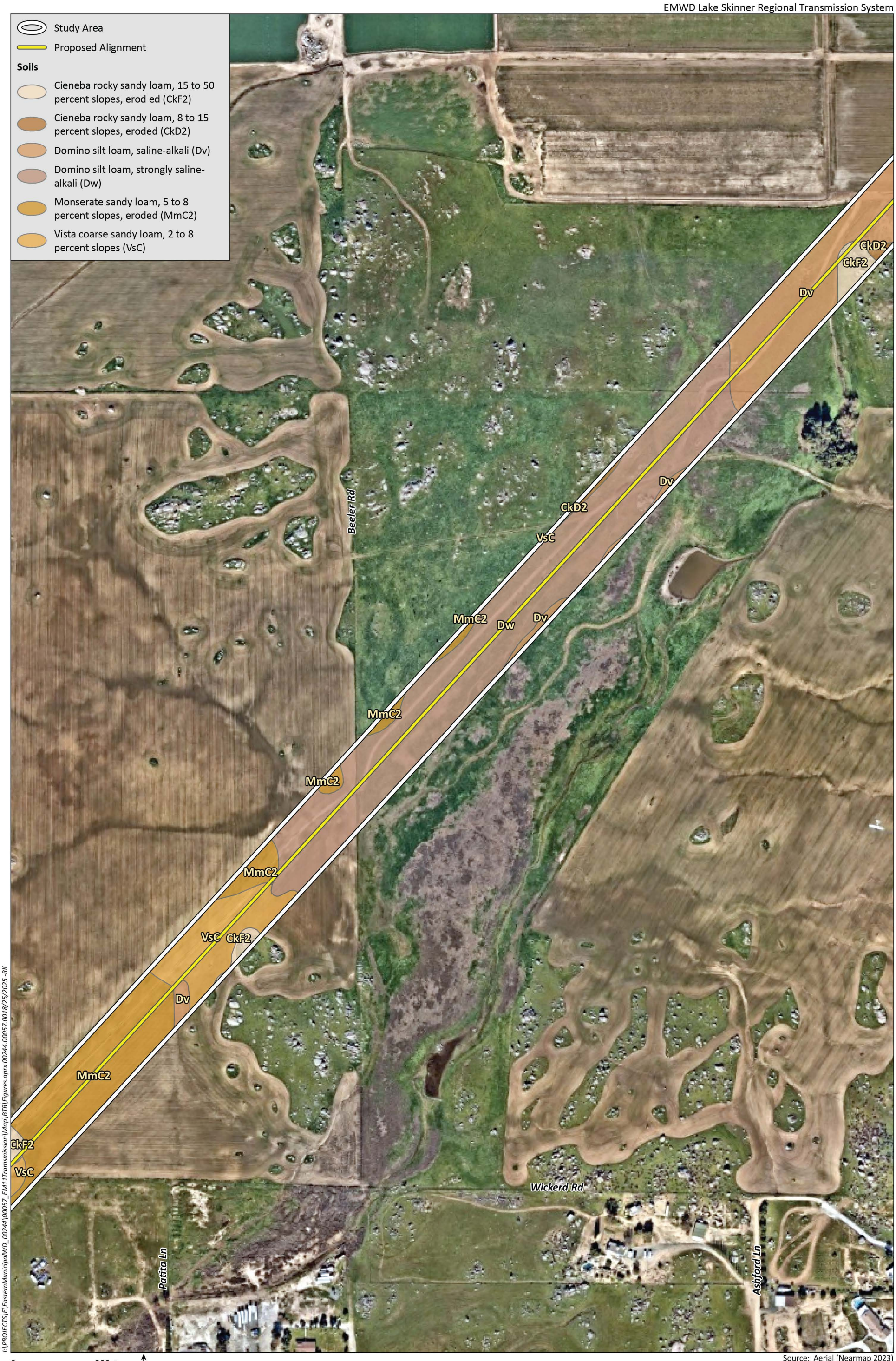
Soils

Figure 7e

Study Area
Proposed Alignment

Soils

- Cieneba rocky sandy loam, 15 to 50 percent slopes, erod ed (CkF2)
- Cieneba rocky sandy loam, 8 to 15 percent slopes, eroded (CkD2)
- Domino silt loam, saline-alkali (Dv)
- Domino silt loam, strongly saline-alkali (Dw)
- Monserate sandy loam, 5 to 8 percent slopes, eroded (MmC2)
- Vista coarse sandy loam, 2 to 8 percent slopes (VsC)



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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Soils

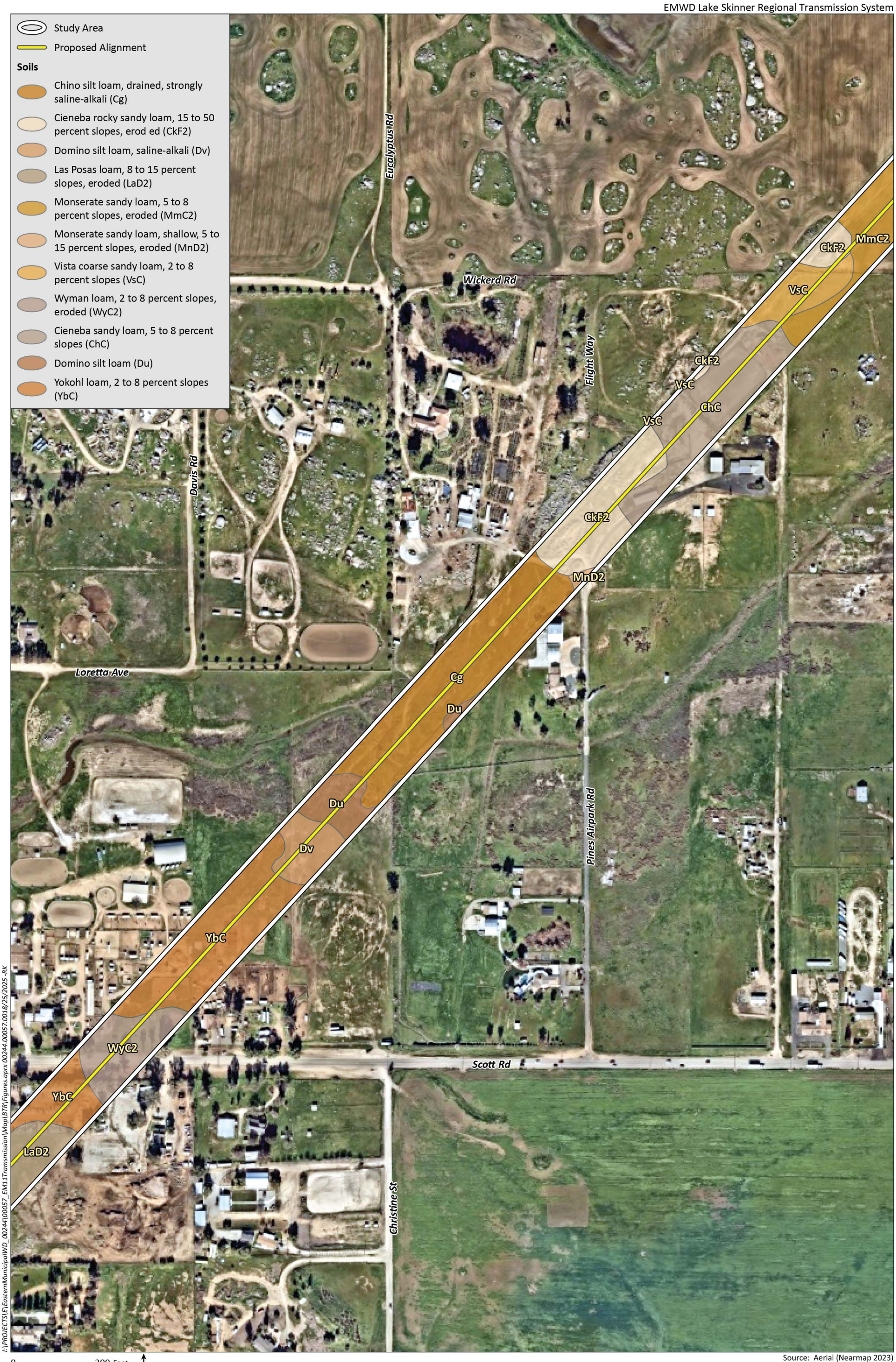
Figure 7f

Study Area

Proposed Alignment

Soils

- Chino silt loam, drained, strongly saline-alkali (Cg)
- Cieneba rocky sandy loam, 15 to 50 percent slopes, erod ed (CkF2)
- Domino silt loam, saline-alkali (Dv)
- Las Posas loam, 8 to 15 percent slopes, eroded (LaD2)
- Monserate sandy loam, 5 to 8 percent slopes, eroded (MmC2)
- Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded (MnD2)
- Vista coarse sandy loam, 2 to 8 percent slopes (VsC)
- Wyman loam, 2 to 8 percent slopes, eroded (WyC2)
- Cieneba sandy loam, 5 to 8 percent slopes (ChC)
- Domino silt loam (Du)
- Yokohl loam, 2 to 8 percent slopes (YbC)



0 300 Feet

Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Soils

Figure 7g

Study Area

Proposed Alignment

Soils

- Cajalco fine sandy loam, 2 to 8 percent slopes, eroded (CaC2)
- Cajalco fine sandy loam, 8 to 15 percent slopes, eroded (CaD2)
- Las Posas loam, 2 to 8 percent slopes (LaC)
- Las Posas loam, 8 to 15 percent slopes, eroded (LaD2)
- Wyman loam, 2 to 8 percent slopes, eroded (WyC2)
- Bosanko clay, 2 to 8 percent slopes (BfC)
- Honcut loam, 2 to 8 percent slopes, eroded (HuC2)
- Las Posas loam, 5 to 8 percent slopes, eroded (LaC2)
- Yokohl loam, 2 to 8 percent slopes (YbC)

Scott Rd
Hallberg Ave
Jeret Rd
Perrine St
Perrine St
Aaron Rd
Aaron Rd
Curzulla Rd
Leon Rd
Fowler Dr
Louise Rd
Sunny Hills Dr
Via los Rosas
Via Curtidor
Calle Vientos
Mona Ln
Clowes Ln
La Ray Ln
Wilder Way

YbC
LaD2
HuC2
LaC
CaC2
BfC
BfC
LaC
LaD2
LaC2
LaD2
LaC
CaD2
CaC2
LaC
CaC2

0 300 Feet

Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Soils

Figure 7h

Study Area

Proposed Alignment

Soils

- Buchenau silt loam, 2 to 8 percent slopes, eroded (BkC2)
- Cajalco fine sandy loam, 2 to 8 percent slopes, eroded (CaC2)
- Las Posas loam, 2 to 8 percent slopes (LaC)
- Porterville clay, moderately deep, slightly saline-alka li, 0 to 5 percent slopes (PtB)
- Buren loam, deep, 2 to 8 percent slopes, eroded (BxC2)

LaC
CaC2
LaC
BxC2
PtB
BkC2
PtB
PtB

Keller Rd
Kooden Rd
Ruft Rd
Flossie Way
Briar Rose Dr
Soapstone Cir
Sutton Ranch Pl
Reserve Dr
Whisper Heights Pkwy
Citrine St
Pat Rd
Partridgeberry Dr
Darlington Oak Dr
Petal Cir
Velvetleaf St
Pepperbush Cir
Silky Dogwood Dr
Mosaic Ct

Astoria Ln
Big Sur Dr
Delilah Ct
Hilton Rd
Gazing Star Ln
Chenille St
Mossy Bend Ln
Shasta St
Laelia Cir
Auburn Way
Bloomfest St
Leon Rd
Palette Rd
Acorn Glen Ln
Lapis Ct
Citrine Dr
Bright Pine Way
Spencers Crossing Pkwy
Turquoise Ln
Treetop Ln
Candlestick Cir
Nature Rd
Bent Head Way
Pio Rd

0 300 Feet

Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Soils

Figure 7i

Study Area

Proposed Alignment

Soils

- Friant fine sandy loam, 5 to 25 percent slopes, eroded (FwE2)
- Porterville clay, 0 to 8 percent slopes (PoC)
- Porterville clay, moderately deep, slightly saline-alka li, 0 to 5 percent slopes (PtB)
- Porterville gravelly clay, moderately deep, 2 to 15 per cent slopes, eroded (PvD2)
- Porterville clay, moderately deep, 2 to 8 percent slope s (PsC)

Bright Pine Way
Candlestick Cir
Falling Star Pl
Dr
Myoporum Ln
Serissa Ct
Yellow Pine Rd
Fescue Way
Red Spruce St
Bristly Ct
Windflower Ln
Baxter Rd
Twinspur Dr
Snowberry Ln
Indian Grass Dr
Thimbleberry Ln
Speargrass Ct
Wheatgrass Dr
Bluestem Dr
Goldthread Ln
Crocus Dr
Prairie Sun Way
Dropseed Dr
Roselle St
Olympia Rose Dr
White Clover Ct
Evening Glow Dr
Mayapple Ct
Stonecrop Ct
Summerholly Ln
Bush Clover Way
Suncatcher St
Sugar Maple St
Starfire Cir
Leon Rd

PtB
PoC
PoC
PsC
PsC
FwE2
PsC
PvD2

Pepperbush Cir
Silky Dogwood Dr
Mosaic Ct
Velvetleaf St
Catania Cir
Windstone Dr
Yellow Root Ct
Branches Cir
Armstrong Rd
Sweet Bells Dr
Spice Bush Cir
Kooden Rd
Cookie Rd
Branding Iron Ct
Ryanside Ct
Pinon Pine Cir
Jean Nicholas Rd
Jean Nichol Rd
Condor Dr
Kestrel Way
Trumpeter Ln
Lone Hill Ct
Nightingale St
Flamingo Way
Slater Ave
Pintail Way
Bold Ct
Peregrine Way
Quail Garden Ct
Euclid Loop
Bermuda St
Bell Cir
Saguaro Dr
Dogwood Cir
Janelle Ln
Lantana Way
Azalea Cir

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Soils

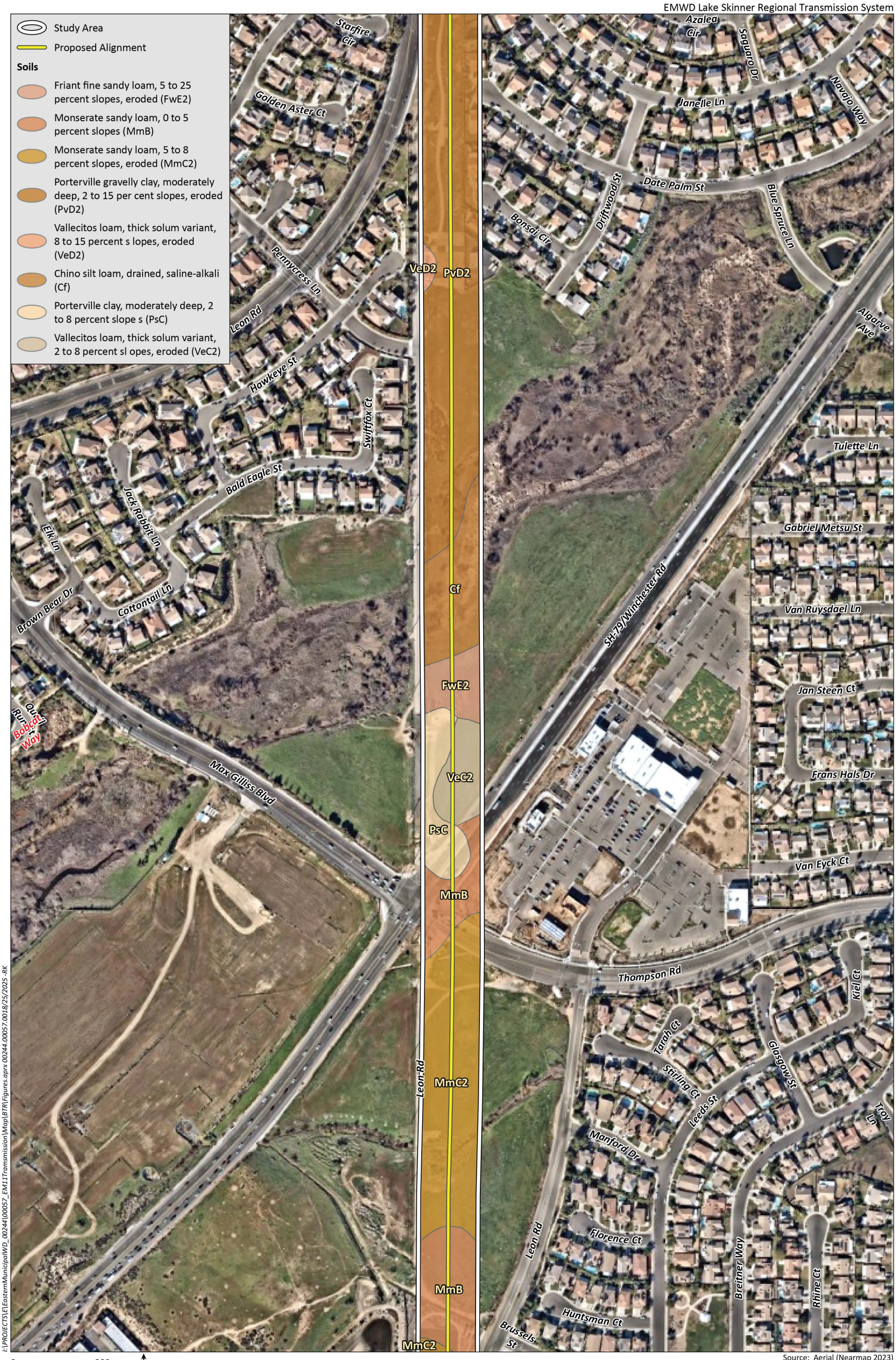
Figure 7j

Study Area

Proposed Alignment

Soils

- Friant fine sandy loam, 5 to 25 percent slopes, eroded (FwE2)
- Monserate sandy loam, 0 to 5 percent slopes (MmB)
- Monserate sandy loam, 5 to 8 percent slopes, eroded (MmC2)
- Porterville gravelly clay, moderately deep, 2 to 15 per cent slopes, eroded (PvD2)
- Vallecitos loam, thick solum variant, 8 to 15 percent s lopes, eroded (VeD2)
- Chino silt loam, drained, saline-alkali (Cf)
- Porterville clay, moderately deep, 2 to 8 percent slope s (PsC)
- Vallecitos loam, thick solum variant, 2 to 8 percent sl opes, eroded (VeC2)



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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Soils

Figure 7k

Study Area

Proposed Alignment

Existing EM-17 Booster Pump Station/Turnout Site

Potential EM-11 Booster Pump Station/Turnout Sites

Soils

- Buchenau silt loam, 2 to 8 percent slopes, eroded (BkC2)
- Chino silt loam, drained (Ce)
- Cieneba rocky sandy loam, 8 to 15 percent slopes, eroded (CkD2)
- Monserate sandy loam, 0 to 5 percent slopes (MmB)
- Monserate sandy loam, 5 to 8 percent slopes, eroded (MmC2)
- Wyman loam, 2 to 8 percent slopes, eroded (WyC2)
- Bosanko clay, 2 to 8 percent slopes (BfC)
- Cieneba sandy loam, 8 to 15 percent slopes, eroded (ChD2)
- Fallbrook fine sandy loam, shallow, 8 to 15 percent slo pes, eroded (FkD2)
- Fallbrook sandy loam, 8 to 15 percent slopes, eroded (FaD2)
- Yokohl loam, 2 to 8 percent slopes (YbC)

Leon Rd
Huntsman Ct
Leeds St
Breitner Way
Brussels St
Rhine Ct
Via Tierra
Del Ray
Calle Caparica
Amsterdam Rd
Via Quinta Do Reyes
Calle Sagres
Calle Benavente
Calle Lisbon
Calle Grandola
Erica Ct
Cognac St
Calle Cercal
Benton Rd
Penfield Ln
Ermitage Ln
Pomerol Loop
Van Gaale Ln
Auld Rd
Leon Rd

MmB
MmC2
FaD2
BkC2
CkD2
WyC2
Ce
FkD2
BfC
ChD2
YbC

0 300 Feet

Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Soils

Figure 7l

Study Area

Proposed Alignment

Potential EM-11 Booster Pump Station/Turnout Sites

Soils

- Cieneba rocky sandy loam, 8 to 15 percent slopes, eroded (CkD2)
- Las Posas loam, 8 to 15 percent slopes, eroded (LaD2)
- Porterville clay, 0 to 8 percent slopes (PoC)
- Bosanko clay, 2 to 8 percent slopes (BfC)
- Bosanko clay, 8 to 15 percent slopes (BfD)
- Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded (CbF2)
- Fallbrook sandy loam, 8 to 15 percent slopes, eroded (FaD2)
- Yokohl loam, 2 to 8 percent slopes (YbC)

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Soils

Figure 7m

Study Area

Proposed Alignment

Soils

- Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded (MnD2)
- Porterville clay, 0 to 8 percent slopes (PoC)
- Ramona sandy loam, 2 to 5 percent slopes, eroded (RaB2)
- Ramona sandy loam, 5 to 8 percent slopes, eroded (RaC2)
- Bosanko clay, 8 to 15 percent slopes (BfD)
- Ramona sandy loam, 8 to 15 percent slopes, severely ero ded (RaD3)

MnD2
RaB2
RaC2
PoC
RaD3
RaC2
PoC
BfD

Maddalena Rd
Tulle Rd
Deauville Rd
Montfleury Ln
Martin St
Saint Martin Rd
Limoges St
Renoir Rd
Picasso Ct
Perigord Rd
Duclair Rd
Montreaux Rd
Cady Rd
Chantecler Rd
Rancho Kiel Rd
Auld Rd
Dickson Path
Pourroy Rd
Santoro Way
Pebley Ct
Golden Willow Ct
Avocado Ct
Pepper Tree St
Pourroy Rd
Whispering Hills Dr
Cloverhill Way
Running Springs Rd
Fallbrook Cir
Sierra Grove Dr
Wildoak Dr

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Soils

Figure 7n

Study Area

Proposed Alignment

Soils

- Escondido fine sandy loam, 8 to 15 percent slopes, eroded (EcD2)
- Friant fine sandy loam, 5 to 25 percent slopes, eroded (FwE2)
- Grangeville fine sandy loam, saline-alkali, 0 to 5 percent slopes (GvB)
- Hanford coarse sandy loam, 2 to 8 percent slopes (HcC)
- Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded (MnD2)
- Ramona sandy loam, 2 to 5 percent slopes, eroded (RaB2)
- Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded (CbF2)

Balmoral Ln
Marius Ave
Moser Rd
Washington St
Auld Rd
Mazoe St
Priscilla St
Herbsville Ct
Rice Ln
Borel Rd

RaB2
MnD2
RaB2
HcC
RaB2
GvB
GvB
EcD2
FwE2
FwE2
CbF2

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Soils

Figure 7o

3.3.1 Mule Fat Thickets (Mule Fat Scrub)

Mule fat thickets or mule fat scrub consists of a shrub canopy dominated by mule fat (*Baccharis salicifolia*) or co-dominant species: California sagebrush (*Artemisia californica*), willow baccharis (*Baccharis salicina*), coyote brush (*Baccharis pilularis*), laurel sumac (*Malosma laurina*), tree tobacco (*Nicotiana glauca*), willows (*Salix* spp.), blue elderberry (*Sambucus mexicanus caerulea*) and tamarisk (*Tamarix* spp.). This vegetation community occurs on mixed alluvium soil in canyon bottoms, floodplains, irrigation ditches, lake margins, and stream channels. In the study area, this habitat is dominated by mule fat with a few willow trees.

3.3.2 Goodding's Willow-Red Willow Riparian Woodland and Forest (Southern Willow Scrub)

Goodding's willow-red willow riparian woodland and forest or southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat, and with scattered emergent cottonwood (*Populus fremontii*) and western sycamores (*Platanus racemosa*). This vegetation community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. Within the study area, this habitat is dominated by red willow (*Salix laevigata*).

3.3.3 Disturbed Wetland

Disturbed wetland occurs in areas permanently or periodically inundated by water which have been modified by human activity or are dominated by non-native plant species. This habitat, although it has wetland in the name, may not meet the criteria necessary to be classified as a 3-parameter wetland water by the USACE or RWQCB. It is, however, a jurisdictional habitat as either a wetland water or a non-wetland water. To be a wetland water it would have to meet all three wetland water criteria of vegetation, hydrology, and soils, whereas to be a non-wetland water only one of the three parameters (typically hydrology) is required. Species observed in this habitat within the study area include wild oat, short-pod mustard (*Hirschfeldia incana*), mule fat, willows, tamarisk, common plantain (*Plantago major*), and a variety of non-native annuals.

3.3.4 Cattail Marsh (Coastal and Valley Freshwater Marsh)

Coastal and valley freshwater marsh is dominated by perennial, emergent monocots, 5 to 13 feet tall, forming incomplete to completely closed canopies. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs, and freshwater or brackish marshes. These areas are semi or permanently flooded yet lack a significant current (Holland 1986). Dominant species include cattail (*Typha* sp.) and saltmarsh bulrush (*Bolboschoenus maritimus*) along with creeping bentgrass (*Agrostis stolonifera*), Eged's silverweed (*Argentina egedei*), spear-leaved orache (*Atriplex prostrata*), alkali bulrush (*Bolboschoenus robustus*), leafy goosefoot (*Chenopodium foliosum*), brass buttons (*Cotula coronopifolia*), salt dodder (*Cuscuta salina*), salt grass (*Distichlis spicata*), common spikerush (*Eleocharis macrostachya*), duckweed (*Lemna minuta*), pickleweed (*Sarcocornia pacifica*), western sea-purslane(*Sesuvium verrucosum*), and salt sandspurry (*Spergularia salina*). The herbaceous wetland habitat mapped on the site is included within the cattail marsh habitat due to its small size (0.01 acre). Within the study area, this habitat occurs along Salt Creek where it crosses Leon Road near the northern end of the alignment. Species observed in this habitat in the study area include cattail, cocklebur (*Xanthium strumarium*), salt grass, and tamarisk (*Tamarisk* sp.).

3.3.5 Tamarisk Thickets (Tamarisk Scrub)

Tamarisk thickets are typically comprised of shrubs and/or small trees of exotic tamarisk species (*Tamarix* spp.) but may also contain willows (*Salix* spp.), salt bushes (*Atriplex* spp.), catclaw acacia (*Acacia greggii*), and salt grass (*Distichlis spicata*). This habitat occurs along intermittent streams in areas where high evaporation rates increase the salinity level of the soil. Tamarisk is a phreatophyte, a plant that can obtain water from an underground water table. Because of its deep root system and high transpiration rates, tamarisk can substantially lower the water table to below the root zone of native species, thereby competitively excluding them. As a prolific seeder, it may rapidly displace native species within a drainage (Holland 1986). Within the study area, this habitat is overwhelmingly dominated by salt cedar (*Tamarix ramosissima*) and also includes a few mule fat and willow.

3.3.6 Disturbed Swale

Disturbed swale is habitat that is similar to disturbed habitat but has been manipulated to convey storm water along the surface. Within the study area this habitat occurs along the side of the Leon Road. Vegetation within this habitat consists of annual species such as foxtail chess (*Bromus madritensis*), mouse barley (*Hordeum murinum)*, filaree (*Erodium* sp.), stinknet (*Oncosiphon piluliferum*), and a few other annual species.

3.3.7 Basin/Pool

Basins refer to features that may or may not hold water seasonally and are human-made for storm water retention or water quality purposes. Pools can be naturally occurring depressions or human-made features from soil compaction or tire ruts. These are also often referred to as ephemeral pools. This habitat can have a wide variety of vegetation depending upon the landscape position and whether natural or artificial in nature. The basin within the study area is a man-made feature. An ephemeral pool may be regulated as a jurisdictional water if it supports jurisdictional field indicators as defined by the federal and/or State Resource Agencies. The pools within the study area occur as small ephemeral pools that occur in a mix of hard packed soils along dirt roads or road shoulders and natural low points along the alignment.

3.3.8 Open Water

Open water is a stream, land, pond or similar water feature that is covered in water and lacks visible vegetation. Open water can be permanent, or temporary in nature. Open water is regulated as a jurisdictional water as defined by the federal and/or State Resource Agencies. The open water observed in the study area occurs along an intermittent streambed that crosses the Project alignment south of Benton Road.

3.3.9 California Buckwheat Scrub (Riversidean Sage Scrub)

California buckwheat scrub or Riversidean sage scrub is the most xeric expression of coastal sage scrub, typically found on xeric sites such as steep slopes, severely drained soils, or clays that release stored soil moisture slowly. Typical stands are fairly open and dominated by California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum* ssp. *fasciculatum*), and foxtail chess (*Bromus madritensis* ssp. *rubens*). Riversidean sage scrub within the study area is dominated by California buckwheat.

3.3.10 Eucalyptus-Tree of Heaven-Black Locust Groves (Non-Native Woodland)

Eucalyptus-tree of heaven-black locust grove or non-native woodland habitat is comprised of a mix of one or more of *Eucalyptus* spp., black locust *(Robinia pseudoacacia),* blackwood acacia (*Acacia melanoxylon), (Acacia* spp*.)* or tree of heaven *(Ailanthus altissima)* in the tree canopy. They are planted as trees, groves, and windbreaks; naturalized on uplands or bottomlands and adjacent to stream courses, lakes, or levees.

3.3.11 Wild Oats and Annual Brome Grasslands (Valley and Foothill Grassland; Non-Native Grassland)

Valley and foothill grassland or non-native grassland is a dense to sparse cover of annual grasses, often associated with numerous species of showy-flowered native annual forbs. Characteristic species include oats (*Avena* spp.), brome grasses (*Bromus* spp.), and mustards (*Brassica* spp., *Hirschfeldia incana*). Most of the annual introduced species within the non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. Intensive grazing and agricultural practices combined with severe droughts in California contributed to the successful invasion and establishment of these species and the replacement of native grasslands with annual-dominated non-native grasslands. Within the study area, non-native grassland habitat is dominated by wild oat, foxtail chess, dove weed (*Croton setiger*), stinknet, tocalote (*Centaurea melitensis*), short-pod mustard (*Hirschfeldia incana*), and mouse barley (*Hordeum murinum*).

3.3.12 Disturbed Habitat

The disturbed land cover type includes land cleared of vegetation (e.g., dirt roads), land containing a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or land showing signs of past or present animal usage that removes any capability of providing viable habitat.

Within the study area, disturbed habitat consists of bare ground with scattered non-native species most of which are annuals/herbaceous or habitat that is similar to non-native grassland but is dominated by non-native annuals that are not grasses. Disturbed habitat also includes areas of disturbance that have partially been planted with native species but is part of landscaping (native landscaping). Species present in disturbed habitat include stinknet, mustard (*Hirschfeldia incana*), filaree, perennial pepperweed (*Lepidium latifolium*), Russian thistle (*Salsola tragus*), ribwort (*Plantago lanceolata*), slim oat (*Avena barbata*), and tree tobacco (*Nicotiana glauca*). A few individual shrubs or trees that also occur are tamarisk (*Tamarix ramosissima*) and Peruvian pepper tree (*Schinus molle*). Disturbed habitat consists of dirt roads and undeveloped land adjacent to roadsides, and non-grass non-native annual dominated habitat.

3.3.13 Developed

Urban/developed land includes areas that have been constructed upon or otherwise covered with a permanent, unnatural surface and may include, for example, structures, pavement, irrigated landscaping, or hardscape to the extent that no natural land is evident. These areas no longer support native or naturalized vegetation. Developed portions of the study area consist of paved roads,

residential developments, ornamental vegetation, landscaping, tree windrows, and access paths with compacted soil/gravel.

3.3.14 Agriculture

Agricultural areas includes fields, pastures, and row crops. The agricultural areas within the study area are dominated by row crops. This land has been in agricultural use for more than 50 years.

3.4 PLANTS

A total of 114 plant species were observed within the study area during the rare plant and other surveys conducted in the study area. Forty-two species (37 percent) are non-native species (Appendix B, *Plant Species Observed*). The presence of non-native species is indicative of the high degree of disturbance as a result of historical and current uses of the study area. Two of the observed plant species were sensitive species: smooth tarplant (*Centromadia pungens* ssp. *laevis*) and paniculate tarplant (*Deinandra paniculata*).

3.5 ANIMALS

A total of 26 animal species were observed/detected within the study area during the various surveys conducted for the alignment: four reptiles, 13 bird species, four mammal species, and five invertebrates (Appendix C, *Animal Species Observed or Detected*). Three special-status animal species, least Bell's vireo (*Vireo bellii pusillus*; LBVI), California horned lark (*Eremophila alpestris actia*), and orange throated whiptail (*Aspidoscelis hyperythrus*), were observed within or adjacent to the study area during the 2023 biological surveys. Additional details on these and other sensitive species with potential to occur within or adjacent to the study area is provided below in the sensitive resources section.

3.6 SENSITIVE RESOURCES

3.6.1 Sensitive Vegetation Communities/Habitats

Sensitive vegetation communities/habitat types are defined as land that supports unique vegetation communities or the habitats of rare or endangered species or subspecies of animals or plants as defined by Section 15380 of the State CEQA Guidelines.

The CDFW evaluates the rarity of natural communities using the NatureServe's Heritage Methodology (Faber-Langendoen et al. 2012) in which communities are given a G (global) and S (State) rank based on their degree of imperilment (as measured by rarity, trends, and threats). Communities are assigned an overall rank of 1 through 5, with 1 being considered very rare and threatened and 5 being considered demonstrably secure. Communities with a Rarity Ranking of S1 (critically imperiled), S2 (imperiled), S3 (vulnerable), and S4 (secure) are considered sensitive by the CDFW. Additionally, a habitat in which a sensitive species occurs is also considered sensitive. Riparian habitats may also be considered sensitive by CDFW regardless of rank.

Three sensitive native riparian vegetation communities occur within the study area: Goodding's willow-red willow riparian woodland (G4, S3, southern willow scrub), cattail marsh (G5, S5, coastal and valley freshwater marsh) and mule fat thickets (G4, S4, mule fat scrub). See the jurisdictional habitat discussion in Section 3.6.4 for additional details regarding the jurisdiction of these habitats. Disturbed wetland,

tamarisk scrub, and disturbed swale are primarily non-native habitats and are typically not sensitive, however these habitats can be jurisdictional (see Section 3.6.4).

California buckwheat scrub (Riversidean sage scrub dominated by California buckwheat) has a ranking of S5 and as such is not considered a sensitive vegetation community. However, this vegetation community supports suitable habitat for the federally threatened and California Species of Concern CAGN and would be considered a sensitive habitat if CAGN are determined to occur within it.

Disturbed habitat, open water, and urban/developed lands also do not meet the definition of sensitive habitat under CEQA.

3.6.2 Special-Status Plant Species

Special-status (sensitive) plant species have been afforded special status and/or recognition by the USFWS and/or CDFW. They may also be included in the CNPS Inventory of Rare and Endangered Plants. Their status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. Sensitive species are those considered unusual or limited in that they are: (1) only found in the region; (2) a local representative of a species or association of species not otherwise found in the region; or (3) severely depleted within their ranges or within the region. Two special-status[1] plant species were observed within the study area: the CNPS Rank 1B.1 smooth tarplant (*Centromadia pungens* ssp. *laevis*) and CNPS Rank 4.2 paniculate tarplant (*Deinandra paniculate*) (Appendix B).

Smooth tarplant (*Centromadia pungens* ssp. *laevis*)
Listing: No federal or state listing status; California Rare Plant Rank (CRPR) List 1.B1.
Distribution: Elevations between 295 to 2,624 feet (90 to 800 meters [m]) amsl in Riverside County.
Habitat: Sandy soil on flats and foothills in mixed grassland, coastal sage scrub, and chaparral communities.
Status on site: Approximately 75 to 100 individuals of this species were observed in the northern portion where the study area crosses Salt Creek, with a few additional individuals observed near Patton Avenue (see Figures 5a-o).

Paniculate tarplant (*Deinandra paniculata*)
Listing: No federal or state listing status; CRPR List 4.2.
Distribution: Alameda, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, Western Riverside, San Bernardino, and San Diego counties; Baja California, Mexico. Elevations range from 80 to 3,100 feet amsl.
Habitat: Grassland, open chaparral and woodland, disturbed areas, often in sandy soil.
Status on site: A concentration of 500,000 + individuals were observed north of Auld Road west of Van Gaale Lane (see Figures 5a-o). Additional patches ranging from several to 100+ individuals were observed in scattered locations throughout the alignment.

[1] CNPS = California Native Plant Society 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 more common elsewhere; 2B–rare, threatened, or endangered in California, but more common elsewhere; 3–more information needed; 4–watch list for species of limited distribution. Extension codes: .1–seriously endangered; .2–moderately endangered; .3–not very endangered.

Sensitive Plant Species with Potential to Occur

A nine quadrangle search area of the CNDDB (CDFW 2025a) and CNPS (CNPS 2025a) databases was conducted to aid in the assessment of sensitive plant species with potential to occur in the study area. The search area included the *Lakeview*, *Perris*, *San Jacinto*, *Murrieta*, *Bachelor Mountain*, *Sage*, *Romoland*, *Winchester*, and *Hemet* quadrangles. Sensitive plant species that may have potential to occur within the study area are listed in Appendix D, *Rare Plant Species Potential to Occur*. An explanation of status codes is included as Appendix E, *Explanation of Status Codes for Plant and Animal Species*. Two species on the list were determined to be present, smooth tarplant and paniculate tarplant, and one species, Coulter's saltbush (Atriplex coulteri) has high potential to occur. Coulter's saltbush was observed within 100 feet of the Project alignment west of Washington Avenue and north of Auld Road. Sensitive plant species on the potential to occur list with a moderate potential to occur based on geographic range, elevation range, and/or suitable habitat in the study area include Munz's onion (*Allium munzii*), Parry's spineflower (*Chorizanthe parryi* var*. parryi*), long-spined spineflower (*Chorizanthe polygonoides* var*. longispina*), small-flowered morning glory (*Convolvulus simulans*), Palmer's grapplinghook (*Harpagonella* palmeri), graceful tarplant (*Holocarpha virgata* ssp*. elongata*), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), small-flowered microseris (*Microseris douglasii* ssp*. platycarpha*). Of these species only Munz's onion (Federally endangered and State threatened) is listed at the federal or state level. The other species have various CNPS ranking sensitivities (Appendix D).

Additional species with potential to occur that are federal or state listed (all low potential) include San Diego ambrosia (*Ambrosia pumilla*), San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), San Diego button celery (*Eryngium aristulatum* var*. parishii*), spreading navarretia (*Navarretia fossalis*), thread-leaved brodiaea (*Brodiaea filifolia*), and California Orcutt grass (*Orcuttia californica*).

Based on a review of USFWS Information for Planning and Consultation (USFWS 2025b), eight federally endangered plant species have been documented within the study area and a 1,000-foot buffer from the edge of the study area. These species are Munz's onion, San Diego Ambrosia, San Jacinto Valley crownscale, thread-leaved brodiaea, slender-horned spineflower (*Dodecahema leptoceras*), San Diego button-celery, spreading navarretia, and California Orcutt grass. These species and habitat associations are included in Appendix D.

3.6.3 Special-Status Animal Species

Special-status animal species include those that have been afforded special status and/or recognition by the USFWS and/or CDFW. In general, the principal reason an individual taxon (species or subspecies) is given such recognition is due to the documented or perceived decline or limitations of its population size or geographical extent and/or distribution, resulting in most cases from habitat loss.

Three special-status animal species were observed within or adjacent to the study area during the 2023 biological surveys: least Bell's vireo, California horned lark, and orange throated whiptail (see Appendix C). The special-status animal species known to occur within the study area are listed below. Status codes are defined in Appendix E.

Least Bell's vireo (*Vireo bellii pusillus*)
Status: Federal Endangered, Bird of Conservation Concern/State Endangered

Distribution: In California, breeds along the coast and western edge of the Mojave Desert from Santa Barbara County south to San Diego County, and east to Inyo, San Bernardino, and Riverside counties.
Habitat(s): Breeding habitat consists of early to mid-successional riparian habitat, often where flowing water is present, but also found in dry watercourses within the desert. A structurally diverse canopy and dense shrub cover is required for nesting and foraging. Dominant species within breeding habitat for the Project area includes cottonwood (*Populus* spp.) and willows (*Salix* spp.) with mule fat (*Baccharis salicifolia*), oaks (*Quercus* ssp.), and sycamore (*Platanus racemosa*). In desert areas dominate species can also consist of mesquite (*Prosopis* spp.) and arrowweed (*Pluchea sericea*). Species can be tolerant of the presence of non-native species such as tamarisk (*Tamarix* spp.) within its breeding habitat and has been observed nesting in Tamarisk.
Status on site: An individual was heard singing from the riparian habitat adjacent to the alignment between Benton Road and Thompson Road (see Figure 5l). Potential habitat for LBVI occurs in the riparian habitats that occur north of the intersection of Max Gillis Road and Winchester Road (see Figure 5k), southwest of the intersection of Leon Road and Thompson Road (see Figure 5k) and north and south of Auld Road (see Figure 5o).

California Horned Lark (*Eremophila alpestris actia*)
Status: no federal listing/watch list
Distribution: In California, occurs along the coastal ranges of from San Joaquin Valley south to the U.S./Mexico border.
Habitat(s): Inhabits a wide variety of open habitats with low, sparse vegetation where trees and large shrubs are generally absent. Suitable habitats include grasslands along the coast, deserts within the inland regions, shrub habitat at higher elevations, and agricultural areas.
Status on site: Several individuals were observed foraging adjacent to the alignment in the open field northwest of the intersection of Auld Road and Washington Avenue.

Orange throated whiptail (*Aspidoscelis hyperythra)*
Status: no federal listing/watch list
Distribution: Found within the southwestern portion of California in southern San Bernardino, western Riverside, Orange, and San Diego counties on the western slopes of the Peninsular ranges below 3,500 feet.
Habitat(s): Coastal sage scrub, chaparral, juniper woodland, oak woodland, and grasslands along with alluvial fan scrub and riparian areas.
Status on site: An individual was observed on a boulder near open sage scrub, north of Auld Road (see Figure 5l)**.**

Special-Status Animal Species with Potential to Occur

A nine quadrangle search area of the CNDDB (CDFW 2025c) database was conducted to aid in the assessment of special-status animal species with potential to occur in the study area. The search area included the *Lakeview*, *Perris*, *San Jacinto*, *Murrieta*, *Bachelor Mountain*, *Sage*, *Romoland*, *Winchester*, and *Hemet* quadrangles. Special-status animal species that were not observed or otherwise detected but determined to have potential to occur on-site are included in Appendix F, *Special-Status Animal Species Observed or with Potential to Occur*. The species are grouped into invertebrates and vertebrates (amphibians, reptiles, birds, and mammals) and alphabetized by scientific name. An explanation of status codes is included as Appendix E. Sensitive animal species on the potential to occur list with a high potential to occur based on geographic range, elevation range, and/or suitable habitat in the study area include coastal whiptail (*Aspidoscelis tigris stejnegeri*), red-diamond rattlesnake (*Crotalus ruber*), San

Bernardino ringneck snake (*Diadophis punctatus modestus*), coast horned lizard (*Phrynosoma blainvillii*), Bell's sage sparrow (*Artemisiospiza belli belli*), burrowing owl (*Athene cunicularia*; BUOW), loggerhead shrike (*Lanius ludovicianus*), CAGN, Dulzura pocket mouse (*Chaetodipus californicus femoralis*), San Diego desert woodrat (*Neotoma lepida intermedia*), southern grasshopper mouse (*Onychomys torridus ramona*), and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*). Only one of these species is listed at the state or federal level, the CAGN, which is federally listed as threatened.

Species with a moderate potential to occur include Crotch's bumble bee (*Bombus crotchii*; CBB), American bumble bee (*Bombus pensylvanicus*), vernal pool fairy shrimp (*Branchinecta lynchi*), Riverside fairy shrimp (*Streptocephalus woottoni*), western spadefoot (*Spea hammondii*), southern California legless lizard (*Anniella stebbinsi*), California glossy snake (*Arizona elegans occidentalis*), San Diego banded gecko (*Coleonyx variegatus abbotti*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), Cooper's hawk (*Accipiter cooperii*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), ferruginous hawk (*Buteo regalis*), northern harrier (*Circus hudsonius*), white-tailed kite (*Elanus leucurus*), yellow warbler (*Setophaga petechia*), western yellow bat (*Lasiurus xanthinus*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), Stephens' kangaroo rat (*Dipodomys stephensi*; SKR), Jacumba pocket mouse (*Perognathus longimembris internationalis*), and American badger (*Taxidea taxus*).

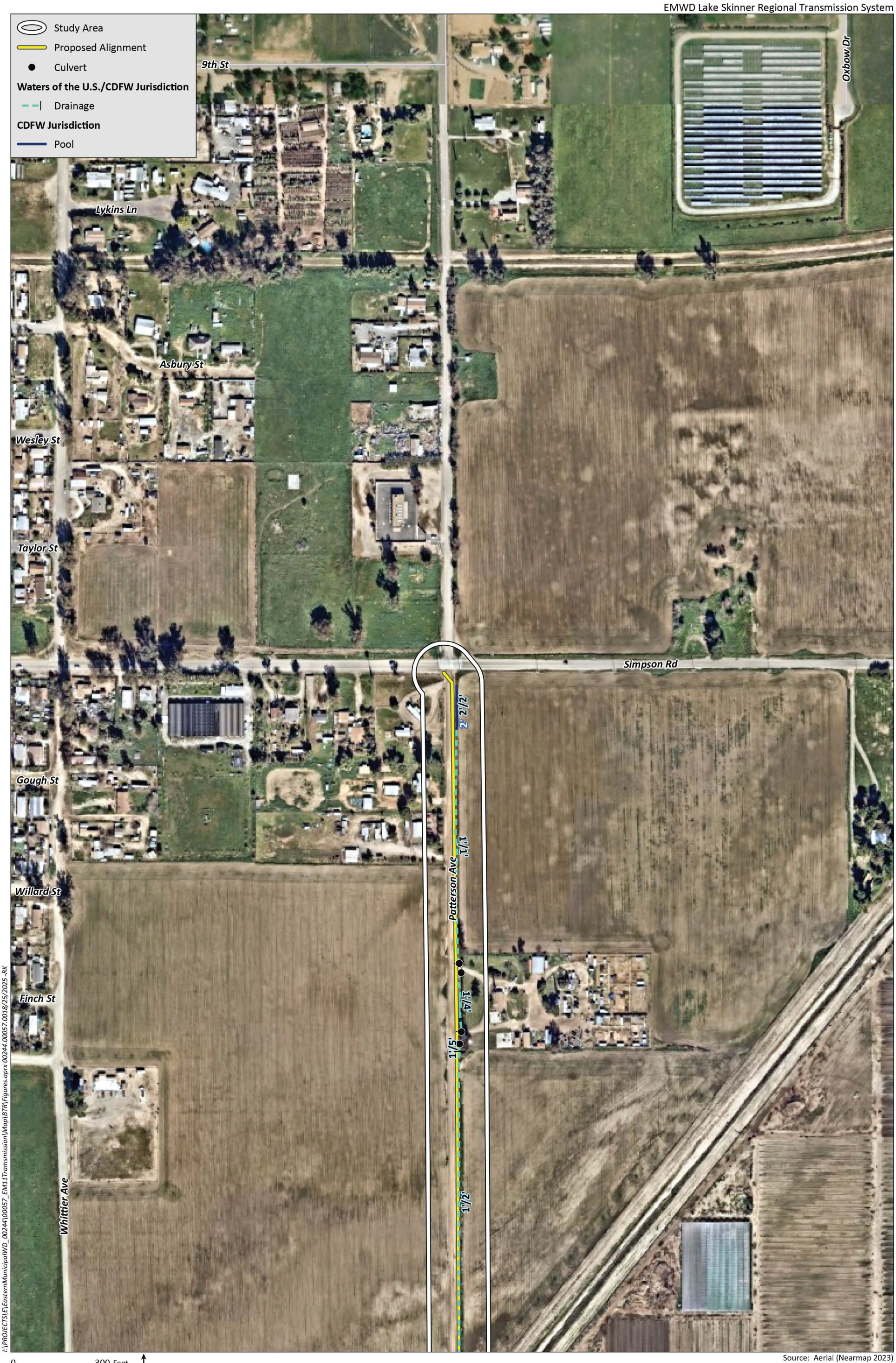
Additionally, there are four listed species with low potential to occur. These species are San Bernardino kangaroo rat (*Dipodomys merriami parvus*; SBKR), San Diego fairy shrimp (*Branchinecta sandiegonensis*), southwestern pond turtle (*Actinemys pallida*), and QCB.

Eight of the species with potential to occur are listed species, proposed for federal listing, or state candidate for listing: SKR, SBKR, western spadefoot San Diego fairy shrimp, Riverside fairy shrimp, vernal pool fairy shrimp, QCB, BUOW, and Crotch's bumble bee. Based on a review of USFWS Information for Planning and Consultation (IPaC; USFWS 2025b), eight animal species listed as threatened or endangered by USFWS have been documented within the study area and a 1,000-foot buffer from the edge of the study area. These species are southwestern willow flycatcher (*Empidonax traillii extimus*), LBVI, QCB, SKR, SBKR, CAGN, Riverside fairy shrimp, and vernal pool fairy shrimp. Two candidates for federal listing as threatened species, monarch butterfly (*Danaus plexippus*) and southwestern pond turtle, were also documented on the IPaC search. As discussed above, an individual LBVI was heard singing adjacent to the alignment at one location. These species and habitat associations are included in Appendix F.

3.6.4 Jurisdictional Waters and Wetlands

In the context of this assessment, jurisdictional waters and wetlands include waters of the U.S., including wetlands regulated by the U.S. Army Corps of Engineers (USACE) pursuant to Clean Water Act (CWA) Section 404; waters of the U.S. and State regulated by the Regional Water Quality control Board (RWQCB) pursuant to Section 401 of the CWA and/or the Porter-Cologne Water Quality Control Act; and/or streambed and riparian habitat regulated by the CDFW pursuant to Sections 1600 *et seq*. of the California Fish and Game Code (CFG Code) (Appendix G, *Federal Jurisdictional Information*; Appendix H, *State Jurisdictional Information*).

Potential waters of the U.S. and waters of the State regulated by USACE, RWQCB, and/or CDFW are present within the study area (Figures 8a-o, *Observed Aquatic Resources*). Southern willow scrub, mule fat scrub, and coastal, valley foothill freshwater marsh, disturbed wetland, tamarisk scrub, and disturbed



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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8a



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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8b

Study Area
Proposed Alignment
No Access/Desktop Review
Potential Stream
Potential Pool
Potential Basin
CDFW Jurisdiction
Pool
Basin

Patterson Ave

E Newport Rd

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8c

EMWD Lake Skinner Regional Transmission System

Study Area
Proposed Alignment
No Access/Desktop Review
Potential Stream
Waters of the U.S./CDFW Jurisdiction
Drainage
CDFW Jurisdiction
Basin

SH-79/Winchester Rd
Holland Rd
10'/10'

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8d



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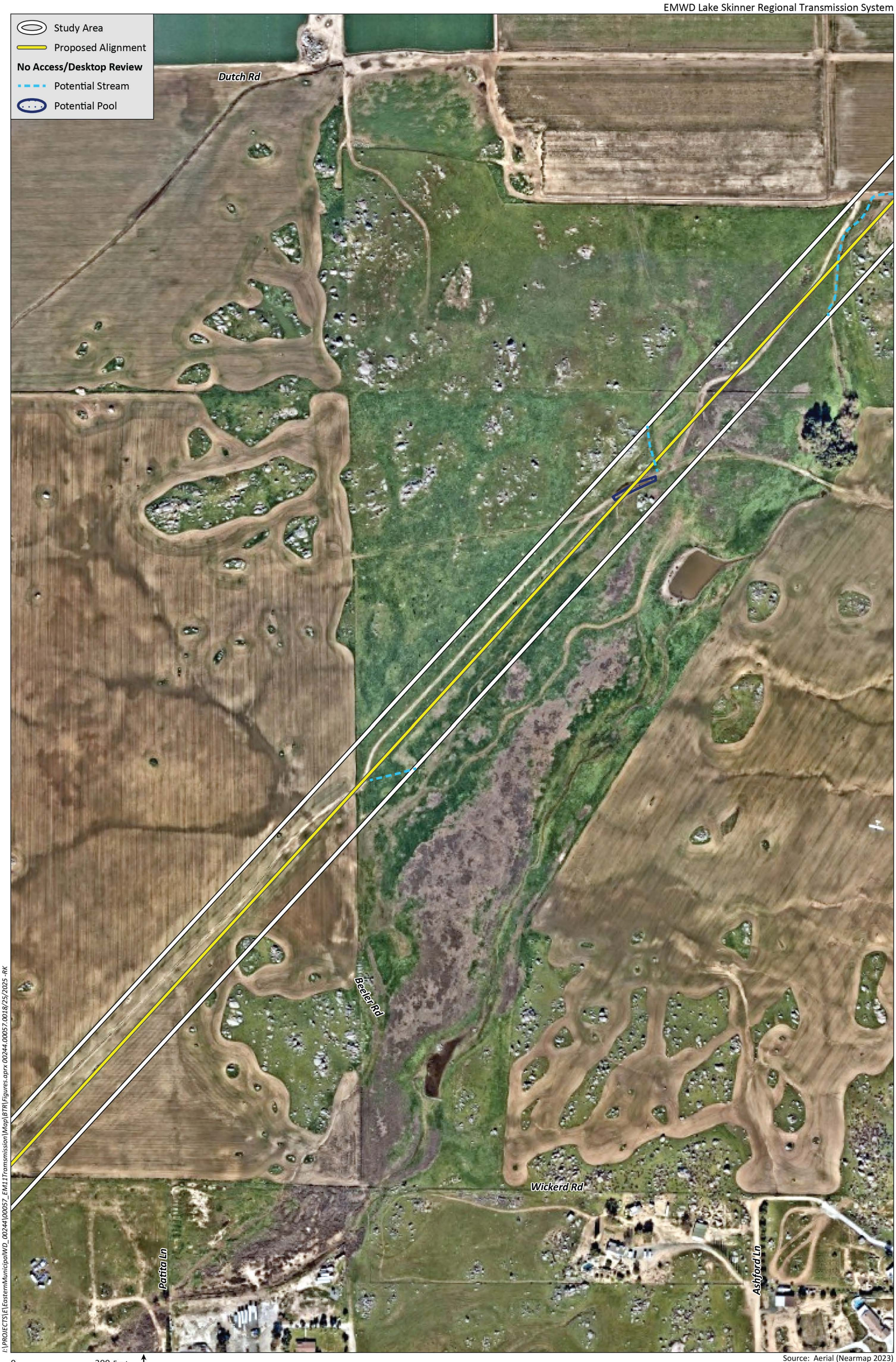
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Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8e



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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8f



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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8g

Study Area
Proposed Alignment
Non-jurisdictional
Road Erosion/Rut

Scott Rd
Hallberg Ave
Jeret Rd
Perrine St
Warm Springs Rd
Aaron Rd
Leon Rd
Fowler Dr
Louise Rd
Curzulla Rd
Sunny Hills Dr
Via los Rosas
Via Curtidor
Calle Vientos
Mona Ln
Clowes Ln
La Ray Ln
Wilder Way

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8h

Study Area
Proposed Alignment
Non-jurisdictional
Concrete
Rip-rap
CDFW Jurisdiction
Swale

Leon Rd
Keller Rd
Rip-rap
Concrete
Kooden Rd
Astoria Ln
Big Sur Dr
Delilah Ct
Hilton Rd
Gazing Star Ln
Chenille St
Shasta St
Mossy Bend Ln
Laelia Cir
Auburn Way
Bloomfest St
Palette Rd
Turquoise Ln
Spencers Crossing Pkwy
Acorn Glen Ln
Lapis Ct
Bright Pine Way
Citrine Dr
Treetop Ln
Candlestick Cir
Nature Rd
Flossie Way
Ruft Rd
Briar Rose Dr
Soapstone Cir
Sutton Ranch Pl
Reserve Dr
Pat Rd
Citrine St
Whisper Heights Pkwy
Petal Cir
Velvetleaf St
Pepperbush Cir
Partridgeberry Dr
Darlington Oak Dr
Silky Dogwood Dr

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8i

Study Area
Proposed Alignment

Nature Rd
Bright
Pine Way
Candlestick Cir
Silky Lupine Dr
Falling Star Pl
Midnight Moon Ln
Windrow Rd
Ribbon Grass Way
Myoporum Ln
Serissa Ct
Yellow Pine Rd
Fescue Way
Red Spruce St
Bristly Ct
Skyflower Dr
Windflower Ln
Twinspur Dr
Baxter Rd
Snowberry Ln
Indian Grass Dr
Thimbleberry Ln
Goldthread Ln
Wheatgrass Dr
Speargrass Ct
Bluestem Dr
Crocus Dr
Prairie Sun Way
Dropseed Dr
Roselle St
White Clover Ct
Olympia Rose Dr
Evening Glow Dr
Mayapple Ct
Stonecrop Ct
Summerholly Ln
Bush Clover Way
Starfire Cir
Sugar Maple St
Suncatcher St
Leon Rd

Velvetleaf St
Pepperbush Cir
Silky Dogwood Dr
Catania Cir
Windstone Dr
Branches Cir
Yellow Root Ct
Armstrong Rd
Kooden Rd
Sweet Bells Dr
Spice Bush Cir
Cookie Rd
Branding Iron Ct
Ryanside Ct
Pinon Pine Cir
Jean Nicholas Rd
Condor Dr
Bola Ct
Kestrel Way
Trumpeter Ln
Lone Hill Ct
Pintail Way
Flamingo Way
Nightingale St
Slater Ave
Quail Garden Ct
Peregrine Way
Euclid Loop
Bermuda St
Saguaro Dr
Bell Cir
Dogwood Cir
Lantana Way
Janelle Ln
Azalea Cir

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8j



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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8k

Study Area
Proposed Alignment
Existing EM-17 Booster Pump Station/Turnout Site
Potential EM-11 Booster Pump Station/Turnout Sites
Culvert

Non-jurisdictional

Road Pool

Waters of the U.S./CDFW Jurisdiction

Non-wetland Waters of the U.S./Stream
Non-wetland Waters of the U.S./Stream - Obscured
Ephemeral Drainage - Obscured
Intermittent Drainage
Sheet Flow

CDFW Jurisdiction

Mule Fat Scrub - Disturbed
Ephemeral Pool
Riparian Woodland - Disturbed
Stream

Huntsman Ct
Leeds St
Breitner Way
Brussels St
Via Tierra
Del Ray
Calle Caparica
Rhine Ct
Amsterdam Rd
Via Quinta Do Reyes
Calle Sagres
Calle Lisbon
Calle Grandola
Calle Benavente
Erica Ct
Calle Cercal
Cognac St
Leon Rd
Benton Rd
Penfield Ln
Road Pool
Ermitage Ln
25'/25'
1'/4'
Road Pool
20'/20'
1'/3'
8'/8'
3'/15'
25'/25'
2'/6'
0.5'/2'
3'/22'
2'/5'
2'/3'
3'/9'
Van Gaale Ln
Pomerol Loop
Auld Rd

0 300 Feet

Source: Aerial (Nearmap 2023)

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HELIX Environmental Planning

Observed Aquatic Resources

Figure 8I

Study Area
Proposed Alignment
Potential EM-11 Booster Pump Station/Turnout Sites
Waters of the U.S./CDFW Jurisdiction
Non-wetland Waters of the U.S./Stream

Avocado Ct
Pepper Tree St
Bottle Brush St
Persimmon Cir
Olive Tree Ct
Silk Tree Ct
Sumac St
Beech St
Cottonwood St
Filbert St
Live Oak Cir
Willow Cir
Sauterne St
Red Oak St
Cheval Dr
Hidden Trail Ct
Cristal Ct
Pomerol Loop
Blanc Ct
Avild Rd
Whispering Hills Dr
Running Springs Rd
Cloverhill Way
Sierra Grove Dr
Wildoak Dr
Fallbrook Cir
Avocet Way
Shadetree Dr
Edgemont Dr
Wintergreen Way
Rose Hill Cir
Tree Ridge Dr
Stoyview Cir
Almond Cir
High Vista Dr
Harvest Dr
Apple Gate Rd
Van Gaale Ln

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8m

Study Area
Proposed Alignment
Culvert
Waters of the U.S./CDFW Jurisdiction
Non-wetland Waters of the U.S./Stream

Armoise Ct
Caden Ct
Deauville Rd
Renoir Rd
Tulle Rd
Perigord Rd
Maddalena Rd
Duclair Rd
Montfleury Ln
Saint Martin St
Limoges St
Picasso Ct
Auld Rd
Montreaux Rd
Cady Rd
Dickson Path
Rancho Kiel Rd
4'/35'
Santoro Way
Pebley Ct
2'/11'
Pourroy Rd
Golden Willow Ct
Pepper Tree St
Whispering Hills Dr
Avocado Ct
Running Springs Rd
Cloverhill Way
Sierra Grove Dr
Wildoak Dr

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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8n



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0 300 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Observed Aquatic Resources

Figure 8o

swale habitats are considered potentially jurisdictional to the USACE, RWQCB, and/or CDFW. The study area also included several streams that cross or are adjacent to the Project alignment. Streams visible during the biological surveys were mapped as potential jurisdictional features. Additional streams may occur within the study area that were obscured by discing, agricultural operations, or may not have been visible due to the recent lack of rainfall. Additional field work, such as a focused aquatic resource delineation that includes a detailed review of historic aerial photographs would be required to properly map potential features not visible during the general biological surveys. One mapped riparian feature, a basin, consists of a human-made detention/water quality basin that is typically not regulated as a jurisdictional feature; however, the final decision on jurisdiction is determined by the regulatory agencies (see Figure 8c).

The Project would be designed to avoid impacts to waters and riparian habitat under the jurisdiction of USACE, RWQCB, and CDFW to the extent feasible. If the jurisdictional features are not avoided, a formal aquatic resource delineation may be needed to determine the jurisdictional characterization of these resources, specifically where they may support wetland resources.

3.6.5 Wildlife Corridor/Core Wildlife Areas

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Wildlife corridors can be local or regional in scale and may function in different ways depending on species and time of year. Wildlife corridors represent areas where wildlife movement is concentrated due to natural or manufactured constraints. Local corridors provide access to resources such as food, water, and shelter. Animals can use these corridors, such as hillsides and tributaries, and main drainages, to travel among different habitats (i.e., riparian and upland habitats). Some animals require riparian habitat for breeding and upland habitat for burrowing. Regional corridors provide these functions and also link two or more large areas of open space. Regional corridors also provide avenues for wildlife dispersal, migration, and contact between otherwise distinct populations.

MSHCP-proposed constrained linkages 17 and 18 both cross the alignment in the study area (Figure 9, *MSHCP Cores and Linkages*). Linkage 17 crosses the alignment through the documented sage scrub habitat, where there is potential to support CAGN and QCB. Linkage 18 follows Winchester Road. The majority of the study area and Project features proposed within it occur within developed roadways/public right-of-way (ROW), active agricultural fields, and previously established pipeline easements.

3.7 NON-METROPOLITAN ALTERNATIVE ALIGNMENT CONDITIONS

The Non-Metropolitan Alternative occurs in the same general region as the selected Project alignment and, as such, occurs on land with similar land uses, topography, and soils. The Non-Metropolitan Alternative includes portions of the alignment along existing roadways and along undeveloped land. Based on a review of Google Earth aerial photographs, the habitats within or adjacent to the proposed alignment include land uses characterized by developed land, disturbed habitat, agriculture, and residential developments. The same critical habitat areas occur near, but not within, the Non-Metropolitan Alternative alignment as they do in the selected alignment.

In addition to the land uses, the vegetation communities that are also present include grasslands, sage scrub, non-native woodland, streams, and various potential wetland habitats including potential ephemeral pools. These habitats also occur along or adjacent to the selected Project alignment.

As the Non-Metropolitan Alternative occurs primarily along the same habitats within the same regional area, the sensitive plant and animal species with potential to occur within those habitats are nearly identical. The differences are that species associated with pools and similar habitats have lower potential to occur along the Non-Metropolitan Alternative alignment, and that the sage scrub crossed by the Non-Metropolitan Alternative has higher potential to support CAGN than the proposed Project alignment.

Similar to the proposed Project alignment, the Non-Metropolitan Alternative occurs near or adjacent to several jurisdictional riparian habitats or streams. The Non-Metropolitan Alternative alignment includes multiple locations where it crosses or occurs adjacent to riparian habitats or streams, including Salt Creek and a second, large, unnamed drainage course that connects to Warm Springs Creek. The Non-Metropolitan Alternative alignment also crosses both MSHCP-proposed constrained linkages 17 and 18 similar to the proposed Project alignment.

4.0 REGULATORY FRAMEWORK

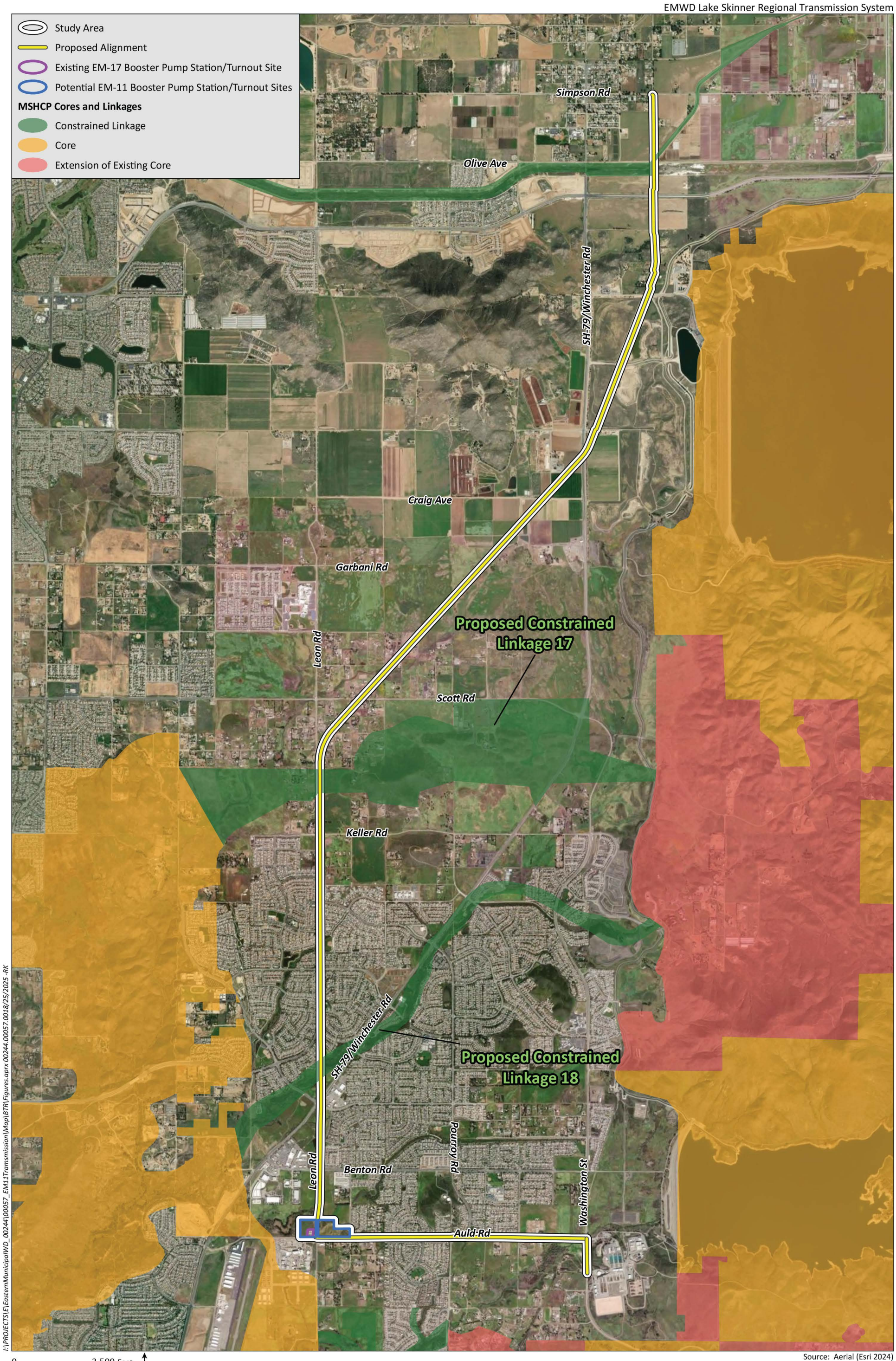
Biological resources in the study area are subject to regulatory review by federal, State, and local agencies. Under CEQA, impacts associated with a proposed project are assessed with regard to significance criteria determined by the CEQA Lead Agency (in this case, EMWD) pursuant to the CEQA Guidelines, 14 California Code of Regulations (CCR) § 15000 *et seq*. Biological resource-related laws and regulations that apply to the Project include the Federal Endangered Species Act (FESA), Migratory Bird Treaty Act (MBTA), CWA, CEQA, California Endangered Species Act (CESA), and CFG Code.

4.1 FEDERAL

4.1.1 Federal Endangered Species Act

Administered by the USFWS, FESA provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction. Section 9 of the FESA prohibits unauthorized "take" and defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Take may also include modification of habitat if it causes injury or death.

Sections 7 and 10(a) of the FESA regulate actions that could jeopardize endangered or threatened species. Section 7 generally describes a process of federal interagency consultation and issuance of a biological opinion and incidental take statement when federal actions may adversely affect listed species. In this case, take can be authorized via a letter of biological opinion issued by the USFWS for non-marine related listed species issues. A Section 7 consultation (formal or informal) is required when there is a nexus between endangered species' use of a site and there is an associated federal action for a proposed impact (e.g., the USACE would initiate a Section 7 consultation with the USFWS for impacts proposed to USACE jurisdictional areas that may also affect listed species or their critical habitat). Section 10(a) allows issuance of permits for incidental take of endangered or threatened species with preparation of a Habitat Conservation Plan (HCP) when there is no federal nexus. The term "incidental" applies if the taking of a listed species is incidental to, and not the purpose of, an otherwise lawful activity. An HCP demonstrating how the taking would be minimized and how steps taken would ensure the species' survival must be submitted for issuance of Section 10(a) permits. The MSHCP is a 10(a) permit for entities that are signatories or those that are Participating Special Entities (PSE).



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0 3,500 Feet

Source: Aerial (Esri 2024)

HELIX Environmental Planning

MSHCP Cores and Linkages

Figure 9

Identified by the USFWS, critical habitat is defined as areas of land that are considered necessary for endangered or threatened species to recover. The ultimate goal is to restore healthy populations of listed species within their native habitat, so they can be removed from the list of threatened or endangered species. Once an area is designated as critical habitat pursuant to FESA, federal agencies must consult with the USFWS to ensure that any action they authorize, fund, or carry out is not likely to result in destruction or adverse modification of the critical habitat.

4.1.2 Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the federal MBTA. The MBTA prohibits the take (including killing, capturing, selling, trading, and transporting) of protected migratory bird species without prior authorization from USFWS.

4.1.3 Clean Water Act and Rivers and Harbors Act

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the CWA. The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. Permitting for projects filling waters of the U.S. is overseen by the USACE under Section 404 of the CWA. Most development projects are permitted using Individual Permit or Nationwide Permit instruments. Processing of Nationwide Permits requires compliance with jurisdictional impact thresholds and are generally more streamlined than processing of Individual Permits.

4.2 STATE REGULATIONS

4.2.1 California Environmental Quality Act

Primary environmental legislation in California is found in CEQA and its implementing guidelines (State CEQA Guidelines), which require that projects with potential adverse effects (i.e., impacts) on the environment undergo environmental review. Adverse environmental impacts are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

4.2.2 California Endangered Species Act

Under state law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. CESA authorizes “take” of listed plant or wildlife species pursuant to an Incidental Take Permit. Species that are candidates for being listed under the CESA are treated as if they were officially listed.

4.2.3 Streambed Alteration Agreement

The CFG Code provides specific protection and listing for several types of biological resources. Section 1600 of CFG Code requires a Streambed Alteration Agreement (SAA) for any activity that would alter the flow, change, or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake. Typical activities that require an SAA include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts

and bridge supports, cofferdams for construction dewatering, and bank reinforcement. Notification is required prior to any such activities.

4.2.4 Nesting Birds

Pursuant to CFG Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Raptors and owls and their active nests are protected by CFG Code Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that construction activities (particularly vegetation removal or construction near nests) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds would not be disturbed, subject to approval by CDFW and/or USFWS.

4.2.5 Native Plant Protection Act

Sections 1900–1913 of the CFG Code (Native Plant Protection Act; NPPA) direct the CDFW to carry out the state legislature's intent to "…preserve, protect, and enhance endangered or rare native plants of this state." The NPPA gives the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take.

4.2.6 California Native Plant Society

The California Native Plant Society (CNPS) ranks the sensitivity of plants in California. Plants are given ranks of 1A, 1B, 2A, 2B, 3, 4, or no rank, along with additional qualifiers that are explained in detail in Appendix E. The lower the rank number the higher the species' sensitivity. Sensitive plants species with CNPS California Rare Plant Rank 1A, 1B, 2A, or 2B are sensitive under CEQA. Plants with a rank of 3 or 4 are considered watch list species and are of the lowest sensitivity and impacts to these species are less than significant under CEQA. Often the details of CNPS rank 4 species are not fully known and additional information is required to either remove the rank or grant a higher rank.

4.3 LOCAL REGULATIONS

4.3.1 Western Riverside Multiple Species Habitat Conservation Plan

The MSHCP is a comprehensive multi-jurisdictional effort that includes multiple cities and unincorporated County lands in western Riverside County. Rather than addressing sensitive species on an individual basis, the MSHCP focuses on the conservation of 146 species, proposing a reserve system of approximately 500,000 acres and a mechanism to fund and implement the reserve system (Regional Conservation Authority [RCA] 2003). Most importantly, the MSHCP allows participating entities to issue take permits for listed species so that individual applicants need not seek their own permits from the USFWS and/or CDFW. The MSHCP was adopted on June 17, 2003, by the Riverside County Board of Supervisors. The Incidental Take Permit was issued by both the USFWS and CDFW on June 22, 2004.

EMWD is not a signatory to the MSHCP and, as such, is not subject to the requirements of the MSHCP. EMWD has the option to obtain take authorization for activities by receiving coverage through the PSE process. QCB, CAGN, and SBKR are all covered species under the MSHCP and if the proposed focused

surveys observed one or both of these species, EMWD may consider pursuing the PSE process under MSHCP. The details regarding the PSE option are discussed in mitigation measure **BIO-2**.

4.3.2 Stephens Kangaroo Rat Habitat Conservation Plan

The Riverside County Habitat Conservation Agency (RCHCA) has a Section 10A permit granted by US Fish and Wildlife Service for SKR. The SKR Habitat Conservation Plan (HCP) is the document for this Section 10A permit. This permit allows for "take" of SKR as part of development activity. "Take" is defined by the Endangered Species Act (ESA) as any attempt to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct as it relates to SKR. As individual projects are proposed and approved in the SKR Plan Area, public and private land developers are required to pay a SKR mitigation fee for impacts to the land (RCHCA 2025). The proposed Project occurs within the SKR Plan Area. The SKR Plan allows for the payment a $500 per acre SKR mitigation fee in lieu of obtaining take permit as the SKR Plan is the take permit.

5.0 CRITERIA FOR DETERMINING IMPACT SIGNIFICANCE

The significance of impacts to biological resources present or those with potential to occur was determined based upon the sensitivity of the resource and the extent of the anticipated impacts. For certain highly sensitive resources (e.g., a federally-listed species), any impact would be significant. Conversely, other resources that are of low sensitivity (e.g., species with a large, locally stable population in the County but declining elsewhere) could sustain some impact with a less than significant effect.

According to Appendix G of the CEQA Guidelines, project impacts to biological resources would be considered significant if they would:

(a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.

(b) Have a substantial adverse effect on any riparian habitat or sensitive natural community identified by local or regional plans, policies, regulations or by CDFW or USFWS.

(c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling hydrological interruption, or other means.

(d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

(e) Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

(f) Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

6.0 IMPACT ANALYSIS

This section describes potential direct and indirect impacts associated with the proposed Project. Direct impacts immediately alter the affected biological resources such that those resources are eliminated temporarily or permanently. Direct impact areas for pipelines that would be installed via open cut trenching assume a construction zone impact width of 36 to 49 feet depending on the location of the work and the type of trenching implemented. The construction zone includes trenching, access route, staging, and other Project-related activities. Indirect impacts consist of secondary effects of a project, including noise, decreased water quality (e.g., through sedimentation, urban contaminants, or fuel release), fugitive dust, colonization of non-native plant species, animal behavioral changes, and night lighting. The magnitude of an indirect impact can be the same as a direct impact; however, the effect usually takes a longer time to become apparent. The proposed Project has the potential to cause significant impacts to special-status plant and animal species, sensitive natural communities, jurisdictional wetlands and/or riparian habitats as defined by the USACE, RWQCB, and CDFW. In each case, however, the identified significant impact can be mitigated to a less than significant level.

6.1 SPECIAL-STATUS SPECIES

Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

6.1.1 Analysis

6.1.1.1 Special-Status Plant Species

Two non-listed sensitive plant species were observed within the study area: smooth tarplant and paniculate tarplant (Appendix B). Smooth tarplant is a CNPS 1B.1 species and considered a special-status species under CEQA. CNPS list 4 species are considered a watch list species that more information is required to grant a higher rank to or remove from the CNPS list. Under CEQA Guideline 15380 a plant is considered rare if it is:

- The species exists in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or

- (The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered “threatened” as that term is used in the Federal Endangered Species Act.

CEQA guidelines provide criteria for defining endangered, rare, or threatened taxa and when impacts on these taxa should be considered potentially significant. However, CRPR 4 [watch list species] do not clearly meet CEQA standards and thresholds for impact considerations (CNPS 2020). Paniculate tarplant is a CNPS 4.2 species and locally common, as such, is not considered sensitive species under CEQA; however, minor impacts to CNPS list 4 species are less than significant but are still recommended to be evaluated under CEQA.

Sensitive plant species have potential to occur in proximity to riparian resources, non-native grassland, and rock outcrops along with a few species having potential to occur in disturbed habitat. One listed species, the federal endangered and state threatened Munz's onion (*Allium munzii*) has moderate potential to occur. Six listed species, the federally endangered and state threatened San Diego button-celery (*Eryngium aristulatum* var *parishii*), California Orcutt grass (*Orcuttia californica*), federal endangered San Diego Ambrosia (*Ambrosia pumilla*), San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), thread-leaved brodiaea (*Brodiaea filifolia*), and federally threatened spreading navarretia (*Navarretia fossalis*) have low potential to occur.

Two additional unlisted special-status species, Parry's spineflower (*Chorizanthe parryi* var. *parryi*) and long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), have moderate potential to occur. Nineteen unlisted CEQA special-status species have low potential to occur: Parish brittlescale (*Atriplex parishii*), chaparral sand verbena (*Abronia villosa* var. *aurita*), Davidson's saltscale (*Atriplex serenana* var. *davidsonii*), intermediate mariposa lily (*Calochortus weedii* var. *intermedius*), San Miguel savory (*Clinopodium chandleri*), Wiggin's cryptantha (*Cryptantha wigginsii*), many-stemmed dudleya (*Dudleya multicaulis*), mud nama (*Nama stenocarpa*), white rabbit-tobacco (*Pseudognaphalium leucocephalum*), Rocky Mountain bullrush (*Schoenoplectiella saximontana*), bottle liverwort (*Sphaerocarpos drewiae*), San Bernardino aster (*Symphyotrichum defoliatum*), Vernal barley (*Hordeum intercedens*), Coulter's goldfields (*Lasthenia glabrata* ssp. *Coulteri*), prostrate vernal pool navarretia (*Navarretia prostrata*), Santa Lucia dwarf rush (*Juncus luciensis*), little mousetail (*Myosurus minimus* ssp. *apus*), California screw moss (*Tortula californica*), and Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*).

Additionally, there are 12 CNPS list 4 species that do not meet the CEQA definition of special-status species that have moderate or low potential to occur: small-flowered morning-glory (*Convolvulus simulans*), Palmer's grapplinghook (*Harpagonella palmeri*), graceful tarplant (*Holocarpha virgata* ssp. *elongata*), Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii*), Engelmann oak (*Quercus engelmannii*), small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*), southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), Douglas' fiddleneck (*Amsinckia douglasiana*), Plummer's mariposa lily (*Calochortus plummerae),* Payson's jewelflower (*Caulanthus simulans*), peninsular spineflower(*Chorizanthe leptotheca*), and Fish's milkwort (*Rhinotropis cornuta* var. *fishiae*).

Impacts to the listed or other CEQA-sensitive plant species would be considered significant. Implementation of mitigation measure**s BIO-1, 2a-c, 13, 14, 16, and 17**would reduce the impacts to less than significant.

6.1.1.2 Special-Status Animal Species

This section discussed the special-status animal species that have potential to occur or those species that were incidentally observed but require focused surveys. Species discussed in this section include one species that was incidentally observed (least Bell's vireo) and six species with potential to occur.

Burrowing Owl

Burrowing owl is a California candidate for listing as state endangered or threatened and as such is granted the same protection as a state listed endangered or threatened species. Burrowing owls are also a federal bird of conservation concern. Suitable habitat and multiple historical records of BUOW occurrences exist in the study area. BUOW have high potential to occur within or adjacent to the Project alignment. Ground disturbance within 500 feet (150 meters) of an active burrow during the breeding

season (February 1 through August 31) or within 165 feet (50 meters) of an active burrow outside the breeding season could result in take of burrowing owl in violation of the CESA, MBTA and CFG code. Direct impact could occur from ground disturbance at a burrow. Indirect impacts could occur as a result of construction noise in the immediate vicinity as described above, such that the disturbance results in nest/burrow abandonment or nest failure. Impacts would be considered significant. Implementation of mitigation measures **BIO-1, 3a and b, 4, 10a and b, 12, 13, 14, and 18** would reduce potentially significant impacts on burrowing owl to less than significant levels.

Coastal California Gnatcatcher

Coastal California Gnatcatcher is federally listed as threatened and a state species of concern. The Project has potential to result in impacts to CAGN where the Project crosses an area of Riversidean sage scrub on the north side of Auld Road west of Van Gaale Lane. Direct impacts could occur as a result of removal of vegetation supporting an active nest and from a loss of foraging habitat. Indirect effects could occur as a result of construction noise in the immediate vicinity of undeveloped areas supporting an active nest, such that the disturbance results in nest abandonment or nest failure. Implementation of mitigation measures **BIO-1, 3a and b, 4, 5, 12, 13, 14, and 18**would reduce the impacts to less than significant.

Least Bell's Vireo

Least Bell's vireo is both federally and state listed as endangered. The Project has potential to result in impacts to least Bell's vireo at three locations, one at the south end of the alignment along Auld Road, the second located south of Thompson Road and the third is northeast of Max Gillis Boulevard. These locations have southern willow scrub both within and adjacent to the study area that have potential to support LBVI. There are also small amounts of riparian habitat between Auld Road and Benton Road that is sparse and although not anticipated to support LBVI, still has low potential to support the species. A focused survey to determine the presence or absence of least Bell's vireo is required if the project will result in direct or indirect impacts to habitat with potential to support the species. Direct impacts could occur from the removal of southern willow scrub or adjacent vegetation that supports LBVI. Indirect effects could occur as a result of construction noise in the immediate vicinity of undeveloped areas supporting an active nest, such that the disturbance results in nest abandonment or nest failure. Implementation of mitigation measures **BIO-1, 3a and b, 4, 6a and b, 12, 13, 14, 17, and 18** would reduce the potential impacts to less than significant.

Quino Checkerspot Butterfly

The quino checkerspot butterfly is federally listed as endangered and was just made a state candidate for endangered listing. As a state candidate for listing as state endangered or threatened and as such is granted the same protection as a state listed endangered or threatened species. The primary host plant for QCB was not observed within the Project alignment during the 2023 rare plant surveys. Additional host plants for QCB are white snapdragon (*Antirrhinum coulterianum*), woolly plantain (*Plantago patagonica*), and Chinese houses (*Collinsia concolor*). There is potential for the host plants to occur in the reach that was not surveyed due to a lack of access between Scott Road and Newport Road. There is also potential for host plants and, therefore, potential for QCB to occur adjacent to the study area, primarily east of Washington Street and adjacent to the reach that could not be surveyed. Direct impacts could occur as a result of removal of scrubland habitat, Riversidean sage scrub, or host plant

and nectar source vegetation that support QCB. Implementation of mitigation measures **BIO-1, 3a and b, 9, 13, 14, 16, and 18** would reduce the impacts to less than significant.

Stephens' Kangaroo Rat

The Project has potential to result in impacts to the federally endangered and state threatened SKR along Patterson Road from Newport Road to Simpson Road, in the reach from Airport Park Road to Newport Road (with no access that was not surveyed), along the east side of Leon Road north of the intersection of Max Gillis Road and Winchester Road, south of Thompson Road, between Benton Road and Auld Road, and northwest of Washington Avenue and Auld Road. Impacts to this species would be considered significant. This species habitat is generally comprised of annual and perennial grasslands and would also use open sage scrub. The Project includes reaches that occur within non-native grasslands and disturbed habitat that are similar in species composition to non-native grassland, as well as sage scrub. Impacts to this species would be reduced to less than significant through the implementation of mitigation measures **BIO-1, 3a and b, 7, 13, 14, 16, and 18**.

San Bernardino Kangaroo Rat

San Bernardino kangaroo rat is both federally and state listed as endangered. The Project has potential to result in impacts to the federal and state endangered San Bernardino kangaroo rat where the portion of the Project located north of Keller Road occurs as it is within the known range of the SBKR. Impacts to this species would be considered significant. Portions of the proposed Project alignment occur within undeveloped land with low potential to support SBKR. This species habitat includes open grasslands and sparse sage scrub with flat or gently sloped terrain. The Project includes impacts to disturbed habitat with characteristics similar to open non-native grassland along Patterson Road from Newport Road to Simpson Road, in the un-surveyed reach from Airport Park Road to Newport Road, and along the east side of Leon Road north of Keller Road. Impacts to this species would require mitigation via implementation of mitigation measures **BIO-1. 3a and b, 8a and b, 13, 14, 16, and 18**

Crotch's Bumble Bee

Crotch's bumble bee is a state candidate for listing as state endangered or threatened and as such is granted the same protection as a state listed endangered or threatened species. The Project has potential to result in impacts to the state candidate CBB. CBB utilizes a variety of habitats including California buckwheat scrub, wild oat and annual brome grasslands, upland mustards or star-thistle fields, and other habitats. These habitats occur scattered throughout the study area. Impacts to this species would be mitigated via implementation of measures **BIO-1, 3a and b, 11, 13, 14, 16, and 18**

6.1.2 Conclusion

Project construction could result in potentially significant impacts on species identified as a candidate, sensitive, or special-status, including several plant and animal species. The species include listed species, candidate species, state species of concern, and nesting birds protected under the federal MBTA and CFG Code; however, the impacts would be reduced to less than significant levels with the implementation of proposed mitigation. The Project would have no impact on any other special-status plant and animal species due to the lack of suitable habitat on the site and regular disturbance.

6.2 RIPARIAN HABITAT AND SENSITIVE NATURAL COMMUNITIES

Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS?

6.2.1 Analysis

6.2.1.1 Southern Willow Scrub

The Project has the potential to impact southern willow scrub habitat located north of Auld Road and east of Winchester Road, northeast of Max Gillis Road (Figure 10, *Red Willow Riparian Woodland [Southern Willow Scrub]*) Direct impacts could occur as a result of removal of vegetation within habitat during construction of the alignment. Impacts to this habitat would be considered significant. Implementation of mitigation measure **BIO-13, 14, 18, 19a, and 19b** would reduce the impacts to less than significant.

6.2.1.2 Coastal and Valley Freshwater Marsh

This Project has the potential to impact coastal and valley freshwater marsh northeast of Max Gillis Boulevard (Figure 11, *Cattail Marsh [Coastal and Valley Freshwater Marsh]*). Impacts to this habitat would be considered significant. Implementation of mitigation measures **BIO-13, 14, 18, 19a and 19b** would reduce the impacts to less than significant.

6.2.1.3 Mule Fat Scrub

This Project has the potential to impact mule fat scrub habitat located at the intersection of Auld Road and Washington Avenue, south of Benton Road, and south of Thompson Road, (Figure 12, *Mule Fat Thickets [Mule Fat Scrub]*). Direct impacts could occur as a result of removal of vegetation within habitat during construction of the alignment. Impacts to this habitat would be considered significant. Implementation of mitigation measures **BIO-13, 14, 18, 19a and 19b** would reduce the impacts to less than significant.

6.2.1.4 Disturbed Wetland

This Project has the potential to impact disturbed wetland habitat located south of Auld Road and east of Winchester Road, along Salt Creek north of Domenigoni Parkway (Figures 8b and o). Direct impacts could occur as a result of removal of vegetation within habitat during construction of the alignment. Impacts to this habitat would be considered significant. Implementation of mitigation measures **BIO-13, 14, 18, 19a and 19b** would reduce the impacts to less than significant.

6.2.1.5 Tamarisk Scrub

This Project has the potential to impact tamarisk scrub habitat located south of Thompson Road, and northeast of Max Gillis Road (Figures 8k). Impacts to this habitat would be considered significant. Implementation of mitigation measures **BIO-13, 14, 18, 19a and 19b** would reduce the impacts to less than significant.

EMWD Lake Skinner Regional Transmission System

Study Area
Proposed Alignment
Existing EM-17 Booster Pump Station/Turnout Site
Potential EM-11 Booster Pump Station/Turnout Sites
Red Willow Riparian Woodland and Forest

Keller Rd
SH-79/Winchester Rd
Pourroy Rd
Benton Rd
Leon Rd
Auld Rd
Washington St

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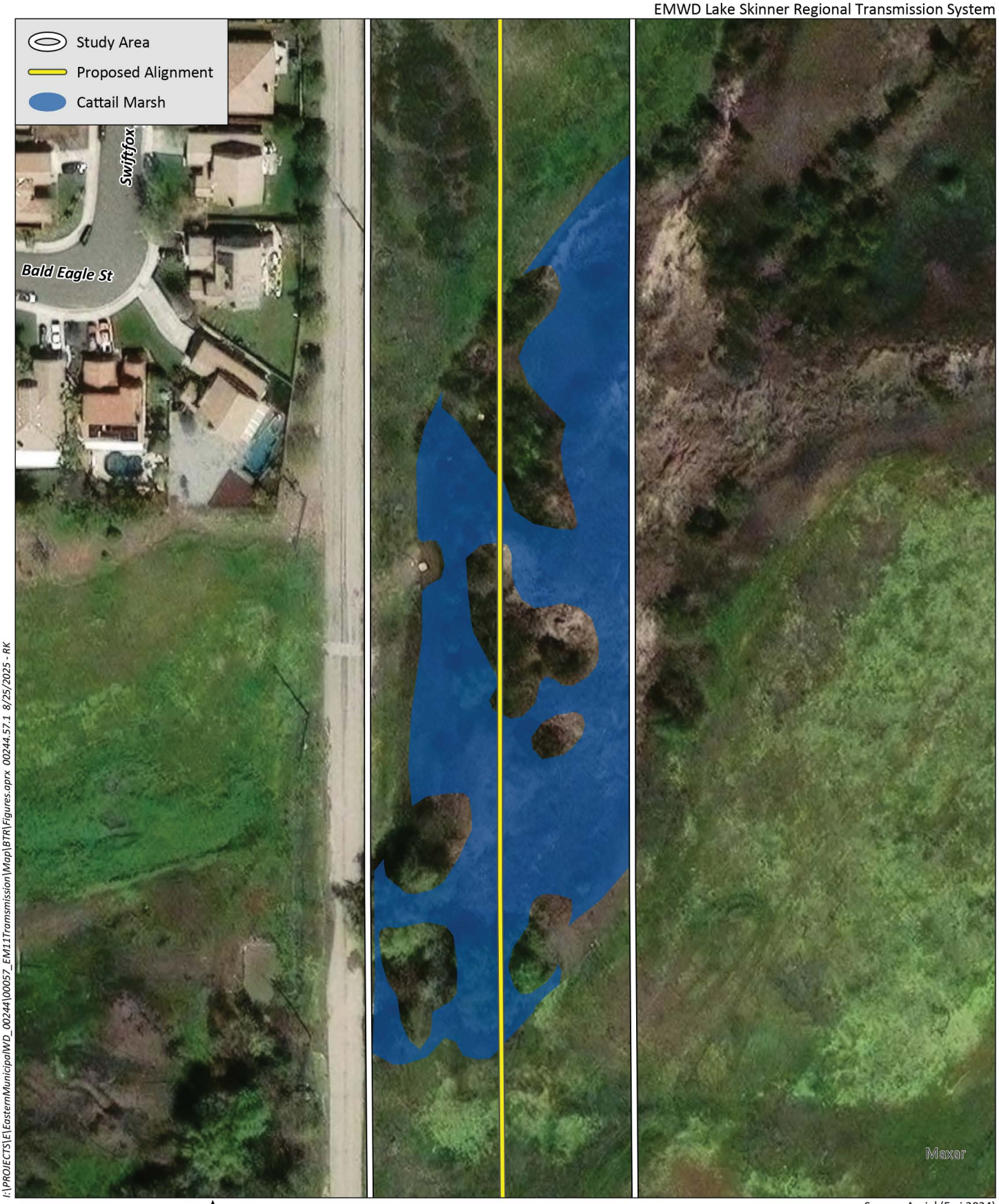
0 1,500 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Red Willow Riparian Woodland (Southern Willow Scrub)

Figure 10



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0 100 Feet

Source: Aerial (Esri 2024)

HELIX Environmental Planning

Cattail Marsh (Coastal and Valley Freshwater Marsh)

Figure 11

EMWD Lake Skinner Regional Transmission System

Study Area
Proposed Alignment
Existing EM-17 Booster Pump Station/Turnout Site
Potential EM-11 Booster Pump Station/Turnout Sites
Mule Fat Scrub/Mule Fat Thickets
Mule Fat Scrub - Disturbed/Mule Fat Thickets

Keller Rd
SH-79/Winchester Rd
Pourroy Rd
Benton Rd
Leon Rd
Auld Rd
Washington St

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0 1,500 Feet

Source: Aerial (Nearmap 2023)

HELIX Environmental Planning

Mule Fat Thickets (Mule Fat Scrub)

Figure 12

6.2.1.6 Streams and Swales

This Project has the potential to impact streambed habitat located north and south of Auld Road and east of Winchester Road, between Auld Road and Benton Road, south of Thompson Road, northeast of Max Gillis Road (Figure 8). Potential streambed impacts have potential to occur in the unsurveyed area between Scott Road and Newport Road and at Salt Creek north of Domenigoni Parkway, and along the east side of Patterson Avenue south of Simpson Road (Figure 8). Potential impacts to swales include swale features east of Leon Road (Figure 8i). Impacts to this habitat would be considered significant. Implementation of mitigation measures **BIO-13, 14, 18, 19a and 19b** would reduce the impacts to less than significant.

6.2.1.7 Pools

This Project has the potential to impact pools located north and south of Benton Road (Figures 8a, c, e, f, and g). Potential impacts to pools also may occur along the undeveloped portion of Patterson Road and along Simpson Road (Figures 5 and 8). Impacts to this habitat would be considered significant. Pools have potential to be a jurisdictional resource to one or more agency. Implementation of mitigation measures **BIO-13, 14, 18, 19a and 19b 8**would reduce the impacts to less than significant.

6.2.2 Mitigation Measures

Impacts to the sensitive riparian communities shall be avoided by having the alignment remain with the limits of existing roadways where feasible, and by limited use of temporary impact areas outside of these habitats. If the alignment must cross these areas, direct impacts would be avoided by use of jack and bore construction, micro-drilling, or similar methods. If direct impacts are proposed to these riparian habitats the Project would seek permits from the appropriate agencies as outlined in mitigation measures **BIO-19a and b**, that may include one or all of the following: CDFW, RWQCB, and USACE. Permits from the agencies will include mitigation measures such as the purchase of mitigation or in lieu credits, and/or habitat restoration that includes a habitat mitigation and monitoring plan.

6.2.3 Conclusion

Project construction could result in potential significant impacts on the riparian communities of mule fat scrub, southern willow scrub, disturbed wetland, coastal and valley freshwater marsh, tamarisk scrub, streams and swales, and basin/pools, however, the impacts would be reduced to less than significant levels with the implementation of proposed mitigation measure **BIO-13, 14, 18, 19a and 19b**.

6.3 JURISDICTIONAL WETLANDS AND WATERWAYS

Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

6.3.1 Analysis

Some riparian habitats that may be wetlands as defined by Section 404 of the CWA occur along the Project alignment. If the potential jurisdictional features will not be avoided, a formal jurisdictional delineation of the features to be impacts would be conducted prior to start of the Project to identify and

map aquatic resources potentially subject to USACE jurisdiction pursuant to Section 404 of the CWA, RWQCB jurisdiction pursuant to Section 401 of the CWA and State Porter-Cologne Water Quality Control Act, and streambed and riparian habitat potentially subject to CDFW jurisdiction pursuant to Sections 1600 et seq. of the CFG Code (Appendix G, *Federal and State Jurisdictional Information*). Field biologists conducting the survey would use recent aerial photographs (1"=100'), topographic maps (1"=100'), soil mapping, NWI mapping, and USGS topographical maps to determine the location of potential jurisdictional areas. The delineation would be conducted on foot with the aid of 1"=150' scale aerials and topographic maps. Potential aquatic resources would be evaluated within the study area including drainage features, depressions, and/or wetland vegetation that crossed or are adjacent to the proposed Project impact areas.

6.3.2 Mitigation Measures

The proposed Project may have potential indirect and direct impacts to jurisdictional aquatic resources that may represent a potentially significant impact. Potential indirect impacts on jurisdictional resources would be avoided during construction through successful implementation mitigation measures **BIO-19a and b** and use of standard BMPs as part of the Project's Storm Water Pollution Prevention Plan (SWPPP). Implementation of a SWPPP and associated BMPs are required under the statewide General Construction Permit (2009-0009-DWQ). Specific BMPs may include but would not necessarily be limited to: maintaining the Project work areas free of trash and debris; employing appropriate standard spill prevention practices and clean-up materials; installing and maintaining sediment and erosion control measures; maintaining effective control of fugitive dust; and properly storing, handling, and disposing of toxins and pollutants, including waste materials.

It is expected that direct impacts to jurisdictional aquatic resources would be avoided through construction methods such as jack and bore, micro-drilling, and/or the use of standard BMPs. Jack and bore is a method of digging a pit on both sides of a stream or riparian habitat and using a machine that drills under the resources and allows the pipe to be placed without surface impacts. This is a dry drill method that does not use water or mud that can spill (frack out) and pollute the resource. Micro-drilling is a trenchless boring method that involves drilling holes smaller than three millimeters in diameter using a remote-controlled tunnelling machine. This method provides a high degree of precision as it uses a laser-guided steerable remote-control system. BMPs to avoid direct impacts include flagging the limits of the wetland resources, not operating equipment within the limits of wetlands, and educating the workers on the location and significance of resources. If direct impacts cannot be avoided, permits and approvals from the USACE, RWQCB, and CDFW under Clean Water Act sections 404 and 401, and CFG Code section 1600 would be obtained in accordance with mitigation measures **BIO-19a and b**. Additional minimization measures and compensatory mitigation are typically required under these permits. Under the permits, the mitigation may include purchase of mitigation bank credits and/or habitat preservation, enhancement, restoration, or creation.

6.3.3 Conclusion

Project construction could result in potential significant impacts to wetlands that include Goodding's willow-red willow riparian woodland, mule fat thickets, cattail marsh, tamarisk thickets, disturbed wetland, pools, disturbed swale, streambeds, and open water along the Project alignment. Impacts on riparian habitats and other waters would be considered a significant impact under CEQA. Implementation of measures **BIO-13, 14, 18, 19a and 19b** would reduce the impacts to less than significant.

6.4 WILDLIFE MOVEMENT AND NURSERY SITES

Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory corridors, or impede the use of native wildlife nursery sites?

6.4.1 Analysis

The Project proponent, EMWD, is not a signatory of the MSHCP and as such not subject to compliance with MSCHP however the cores and linkages of the MSHCP are being used as a guide for wildlife movement. The two linkages that are crossed by the Project are Proposed Constrained Linkage 17 (Linkage 17) and Proposed Constrained Linkage 18 (Linkage 18; Figure 10). Linkage 17 occurs between Scott Road and Keller Road and is designed to connect conserved habitats to the west to existing conservation at Diamond Valley Lake and Lake Skinner. Linkage 17 is planned as a corridor for QCB, CAGN and bobcat. The Project proposed to cross Linkage 17 adjacent and parallel to Leon Road in an effort to limit potential impacts to Linkage 17. The alignment occurs at the approximate location of an existing pipeline. Habitat in this area is a mix of rural residential and non-native grassland. The Project impacts are proposed to include trenching, installation of pipe and filling the trench. Above ground access points may be installed along the alignment.

Linkage 18 is highly constrained by development and generally follows the path of Winchester Road. This linkage serves as a connection between conservation to the southwest and conservation at Lake Skinner and Diamond Valley Lake. The linkage is designed as a corridor for bobcat and Los Angeles pocket mouse. The Project alignment is proposed to occur adjacent to an abandoned portion of Leon Road along the approximate location of an existing pipeline. This location includes a crossing of Warm Springs Creek that is proposed to occur via jack and bore to avoid impacts. Above ground access points may be installed along the alignment but would be placed outside of sensitive habitats. The Project may result in a temporary impact to wildlife movement during construction. The impact to wildlife movement would only occur in segments at the active construction location and not along the entire alignment. Wildlife movement would still be able to occur outside the active construction location. As the Project is an underground pipeline with limited above ground structures, no permanent impacts to wildlife movement are proposed.

Impacts to Linkages 17 and 18 would be reduced to less than significant via implementation of mitigation measures **BIO-13, 14, 16, 17, and 18**.

6.4.2 Mitigation Measures

The Project would reduce impacts proposed to occur within MSHCP Linkage 17 and Linkage 18 by not placing above ground access points within the limits of the linkage and MSHCP criteria cells. The staging area would not be placed in the linkages. Workers would be advised of the species status of the habitat while working in or adjacent to a Linkage. Impacts on wildlife movement would be reduced by not working at night within the linkages. All open trenches and pits within the linkages would have ramps to allow animals to escape should they fall into an open trench or pit. The Project alignment would follow existing roads where they occur along the alignment. Impacts to vegetation will be reduced by limiting spoils piles and staging equipment and similar activities to one side of the trench. A biological monitor would be present daily while work is occurring within the limits of the Linkage 17 and 18 and would have

the ability to temporarily pause the work should an animal occur within the work limits. Temporary above ground impacts will be reseeded according to mitigation measure **BIO-10**.

6.4.3 Conclusion

The study area crosses two MSHCP constrained linkages (see Figure 9). Removal of vegetation or construction of permanent above ground structures within the constrained linkages could be considered a potentially significant impact but would be reduced to less than significant with implementation of mitigation measure **BIO-10**.

6.5 LOCAL POLICIES AND ORDINANCES

Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

6.5.1 Analysis

The Project impacts are primarily to occur within the limits of existing roadways. Where the impacts are proposed within undeveloped land, no native trees are proposed to be removed.

6.5.2 Mitigation

No mitigation is required.

6.5.3 Conclusion

The Project would have no impact on local policies and ordinances.

6.6 ADOPTED CONSERVATION PLANS

Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?

6.6.1 Analysis

The Project proponent, EMWD, is not a signatory of the MSHCP and as such not subject to compliance with MSCHP and details here are related to the Project not being in conflict with the MSCHP versus compliance with the MSCHP. The Project occurs within the limits of the Harvest Valley Winchester Area Plan and Southwest Area Plan of the MSHCP. The Project does not occur within a subunit or criteria cell with the Harvest Valley Winchester Area Plan. The Project alignment does cross SubUnits 4 and 5 of the Southwest Area Plan that include Proposed Core 2, Proposed Constrained Linkages 17 and 18. The alignment occurs along the edge of Criteria Cell (Cell) 5567 within SubUnit 4. The alignment occurs within or on the edge of Cells 5073, 5174, 5479, 5572, 5575, 5677, 5778, 5879, and 0 (Figure 13, *MSHCP*). The majority of the alignment is proposed to occur within existing roadways and rights-of-way (ROW) so as to avoid impacts to undeveloped habitat. Impacts to undeveloped land within Criteria Cells are proposed to occur on the east border of Cell 5778, between Cells 5575 and 5572, 5074 within or adjacent to Proposed Core 2 and Linkage 18, and between Cells 5168 and 5174 within or adjacent to Proposed Linkage 17. The impacts would include trenching to install a pipeline and then backfilling, thus

Study Area
Proposed Alignment
Existing EM-17 Booster Pump Station/Turnout Site
Potential EM-11 Booster Pump Station/Turnout Sites
MSHCP Cell Group
MSHCP Cell
Public/Quasi Public Lands

4007
Simpson Rd
Olive Ave
SH-79/Winchester Rd
Craig Ave
Garbani Rd
Leon Rd
Scott Rd
Keller Rd
SH-79/Winchester Rd
Leon Rd
Benton Rd
Pourroy Rd
Washington St
Auld Rd
4980
5066
5073
5074
5070
5067
5068
5071
5076
5077
5078
A
U
5163
5165
B
5167
5168
5174
5175
5173
5169
5170
5172
5178
5176
5177
5259
5260
5265
5266
0
5275
5279
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5278
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5366
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5379
5381
5374
5375
R
5483
5475
5476
5479
5477
5471
5478
5484
5481
Z
5576
5569
5570
5572
5575
T
5567
5574
5673
5681
5671
5672
5677
A'
B'
5783
5786
5784
5781
5778
F'
C'
5875
5878
5876
0
5879
5886
5894
E'
D'
5974
V
5969
5976
5979
5982
5987
5984
G
5985
H
5989
I
5991
Maxar

0 3,500 Feet

Source: Aerial (Esri 2024)

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HELIX Environmental Planning

MSHCP

Figure 13

creating a temporary impact to the habitat. Impacts within a Linkage or Criteria Cell can be considered significant.

The MSHCP requires projects with potential direct or indirect impact to riparian and riverine resources to avoid or mitigate for impacts. The Project occurs adjacent to, or directly crosses, riparian and riverine habitats. Impacts to these habitats would be considered significant.

The MSHCP also includes measures to protect sensitive plants and animals, such as burrowing owl, which occur within the MSHCP limits. Impacts to these sensitive plants and animals would be significant.

6.6.2 Mitigation

Mitigation measures **BIO-1 through 4, 6a and b, 10a and b, and 12 through 19** would demonstrate the Project does not conflict with the MSHCP. These mitigation measures include focused plant and animal surveys, riparian/riverine avoidance and minimization measures, and limiting impacts to wildlife linkages.

6.6.3 Conclusion

Conflicts with the MSHCP will be reduced to less than significant via implementation of the aforementioned mitigation measures.

6.7 MITIGATION MEASURES

The following mitigation measures would ensure that potential significant impacts on sensitive biological resources and special-status plant and animal species are reduced to a level less than significant with implementation of mitigation.

BIO-1 **Biological Resource Surveys.** Prior to the construction of any Project phase or component sited within or adjacent to an undeveloped open space area (i.e., an area supporting naturalized habitat, sensitive habitat, and/or habitat potentially suitable for special-status species), EMWD shall retain a qualified biologist to perform a general biological survey/habitat assessment to verify existing biological resources on and adjacent to the Project construction areas. An adjacent resources assessment shall occur where accessible (or via binoculars) out to 100 feet along the alignment or out to 500 feet for habitats that can support species that can be indirectly impacted by noise including but not limited to coastal California gnatcatcher, least Bell's vireo, burrowing owl, and nesting raptors. EMWD shall provide the biologist with a copy of Project plans that clearly depict the construction work limits, including construction staging, storage, and access areas, in order to determine which specific portion(s) of the Project will require inspection of adjacent open space areas. The survey shall verify whether the planned construction activities would occur on or in the immediate vicinity of sensitive natural communities, including habitat suitable for special-status species, in addition to potential jurisdictional aquatic resources. The surveys shall also verify whether the construction activities may result in direct or indirect impacts to sensitive natural communities, special-status species, and potential jurisdictional aquatic resources. The biologist shall perform a visual inspection of the adjacent open space area in order to characterize the existing habitat types and determine the likelihood for special-status species to occur, including but not limited to the Quino checkerspot butterfly, coastal

California gnatcatcher, least Bell's vireo, burrowing owl, Crotch's bumble bee, migratory songbirds, and other bird species with the potential to breed in the area. The biologist's inspection shall include all potential habitat for special-status species that occurs within 500 feet of construction areas as access permits (can occur via binoculars for areas with no access). The survey results shall be submitted to EMWD to determine the need to implement additional mitigation measures to avoid, minimize, and mitigate impacts to such resources (provided below), as applicable. If suitable habitat for special-status plant species is confirmed within or immediately adjacent to potential impact areas of the Project, then EMWD shall implement measures **BIO-2a and 2b.** If suitable habitat for special-status wildlife species is confirmed within or immediately adjacent to potential impact areas of the Project, then EMWD shall implement measures **BIO-3a and b, 5, and 6 through 18,** as appropriate. If potential jurisdictional aquatic resources are identified within areas proposed to be impacted, then EMWD shall implement mitigation measures **BIO-119a and b**. If potential impacts to sensitive natural communities are identified, then EMWD shall implement measures **BIO-10, 14, 16, and 18**.

BIO-2a **Rare Plant Surveys.** If it is confirmed through the implementation of mitigation measure **BIO-1** that Project components could impact suitable habitat for special-status plant species, EMWD shall retain a qualified biologist to conduct focused presence/absence surveys for rare plants prior to Project construction. Surveys shall follow protocols and guidelines approved by the USFWS, CDFW, and CNPS and shall be conducted by qualified biologists. Surveys for sensitive plants should occur during the blooming period of target species which will require two surveys to cover the spring and summer blooming species. One survey should occur in the Spring (March through April) and a second survey should occur in summer (late May to early July). The specific timing will be determined by the qualified biologist.

BIO-2b **Rare Plant Avoidance.** If a significant population of rare plant species is identified within a project impact area, then, to the extent feasible, EMWD shall avoid impacts to the population through Project-level design changes and/or construction methods (e.g., trenchless installation of pipelines, working on the other side of the road).

Prior to initiating construction activities, EMWD shall require that the rare plant locations detected during focused rare plant surveys are supplied to the contractor and that the locations are demarcated in the field by a qualified biologist. The rare plant locations to be avoided shall be protected-in-place through the installation of temporary construction fencing or alternative means that are approved by the qualified biologist. The qualified biologist shall monitor construction activities, as appropriate, to help ensure avoidance of the demarcated areas. A final compliance report shall be prepared by the qualified biologist and submitted to EMWD for their records.

BIO-2c **Sensitive Plant Mitigation.** If Project alignment or construction design (**BIO-2b**) cannot be modified in order to avoid impacts, mitigation for impacts to sensitive plants species with CNPS California Rare Plant Rank 1A, 1B, 2A, or 2B shall include one or a combination of the following and occur at a minimum of a ratio of 1:1, as determined by EMWD:

a. Purchase of preservation credits of occupied habitat from a conservation bank approved by USFWS and/or CDFW, as applicable;

b. Acquisition and preservation of off-site mitigation land containing occupied habitat; and/or

c. Preparation and implementation of a rare plant salvage and relocation plan, to include the following requirements, at a minimum:

   i. Evaluation of options for plant salvage and relocation, including native plant mulching, selective soil salvaging, application of plant materials on manufactured slopes, and application/relocation of resources within existing or proposed preserved lands;

   ii. Seed collection and/or transplantation to a suitable receptor site based on the most reliable methods of successful relocation;

   iii. Recommendation for the method of salvage and relocation/application based on feasibility of implementation and likelihood of success; and

   iv. Implementation plan, maintenance and monitoring program, estimated completion time, and any relevant contingency measures.

BIO-3a **Special-Status Wildlife Species Surveys and Avoidance.** If it is confirmed through the implementation of mitigation measure **BIO-1** that the Project phase or component may directly or indirectly impact suitable habitat for special-status wildlife species, EMWD shall retain a qualified biologist to conduct focused, protocol-level surveys for special-status wildlife species prior to commencement of construction activities. Surveys shall follow protocols and guidelines approved by USFWS and/or CDFW and shall be conducted by qualified biologists permitted by the USFWS and the CDFW, as applicable. If special-status wildlife species are identified within a Project impact area, EMWD shall avoid impacts to species and their habitat through Project-level design changes and/or construction methods (e.g., trenchless installation of pipelines).

BIO-3b **Special-Status Wildlife Species Mitigation.** If impacts to special-status wildlife cannot be avoided, EMWD shall seek incidental take authorization by one of two methods:

(1) Participating Special Entity (PSE) process under the MSHCP. To obtain MSHCP coverage as a PSE, the Project is required to demonstrate MSHCP compliance through specific habitat assessments, applicable biological surveys, the provision of an MSHCP consistency analysis, and payment of impact fees. Additionally, impacts to certain species under the MSHCP will require a Determination of Biologically Equivalent or Superior Preservation (DBESP). A DBESP will be prepared as appropriate and will be used to demonstrate avoidance and mitigation related to impacts.

(2) Under the federal or state endangered species acts. EMWD may elect to seek incidental take authorization from USFWS pursuant to FESA Sections 7 or 10 and/or CDFW under CFG Code Sections 2080.1 and 2081(b), as applicable.

   a. Where species protected under Federal law may be impacted, EMWD shall either consult directly with the USFWS to develop and implement a habitat conservation plan and obtain an Incidental Take Permit pursuant to the Federal Endangered

Species Act Section 10(a) or, in the case of Projects with a federal action agency, EMWD shall adhere to the requirements of Federal Endangered Species Act Section 7, which requires the federal action agency to consult with the USFWS to obtain a Biological Opinion and Incidental Take Statement for the Project; and/or

b. Where species protected under state law may be impacted, EMWD shall consult with the CDFW pursuant to Sections 2081 or 2080.1 of the California Endangered Species Act. For projects with direct or indirect impacts to species that are only State-listed and not federally listed as endangered or threatened, EMWD shall obtain a California Endangered Species Act Section Incidental Take Permit from CDFW. For projects with impacts to species that are both state and federally listed as endangered or threatened, EMWD shall obtain a California Endangered Species Act Section 2080.1 Consistency Determination from the CDFW, unless otherwise required by the CDFW.

c. For non-listed species (i.e., special-status species) that are protected under state and/or federal law, EMWD shall consult with the USFWS and CDFW as appropriate and implement appropriate avoidance and mitigation plans such as those discussed in measures **BIO-6a and b, 8a and b, and 10a and b.**

EMWD shall compensate for the loss of occupied habitat through one or a combination of the following, at a minimum ratio of 1:1, as determined by EMWD in consultation with USFWS and/or CDFW, as applicable:

a. Purchase of credits from a conservation bank approved by USFWS and/or CDFW; and/or

b. Acquisition and preservation of off-site mitigation land containing occupied habitat.

BIO-4 **Avoidance of Nesting Birds and Raptors.** To prevent direct impacts to nesting birds, including raptors, protected under the MBTA and CFG Code, EMWD shall enforce the following:

Any Project activity that could affect nesting birds shall occur outside of the general bird breeding season of February 15 to August 31 to the extent feasible. Additional species' (burrowing owl and least Bell's vireo) breeding seasons start before or extend after this general bird breeding season window and are addressed in that species' specific measure. If such activities cannot be conducted outside the general bird breeding season, a qualified biologist with experience in conducting bird breeding surveys shall be retained to conduct a pre-activity nesting bird survey within three days prior to the activities to confirm the presence or absence of active bird nests.

If an active bird nest is found by the qualified biologist, the buffer should be demarcated by temporary fencing, flagging, and or staking as deemed appropriate to avoid impacts. Vegetation removal and/or trimming activities within the buffer shall not be allowed to occur until the qualified biologist has determined that the nest is no longer active. Avoidance buffers shall be 300 feet for passerine birds and 500 feet for raptors and may be

adjusted by the qualified biologist in their professional opinion based on such factors as the avian species involved, ambient levels of human activity, and screening vegetation.

BIO-5 **Coastal California Gnatcatcher Pre-Construction Surveys and Avoidance.** If the Project elects to be a PSE in the MSHCP, this measure is not required. Potentially suitable coastal California gnatcatcher habitat occurs between Benton Road and Van Gaale Lane. Suitable habitat is mapped as Riversidean sage scrub (Figures 5l and m). Within this area and any other potentially suitable gnatcatcher habitat, EMWD shall implement the following:

A qualified biologist (possessing a valid Endangered Species Act Section 10[a][1][A] Recovery Permit) shall survey those habitat areas within the Project limits and up to a 500-foot buffer where access permits. The survey shall be conducted per the current USFWS protocol that currently requires six surveys during the period of March 15 to June 30, or nine surveys between July 1 and March 14. If coastal California gnatcatchers are confirmed to not be present, then mitigation for this species is not required.

If coastal California gnatcatchers are confirmed to be present, then no clearing, grubbing, or other construction activity shall occur within 500 feet of occupied coastal sage scrub during the coastal California gnatcatcher breeding season (March 1 through August 15). If construction activities are to occur during the breeding season within 500 feet of occupied habitat, or if clearing of occupied habitat is required, the Project shall implement mitigation measures **BIO-3b and 12.**

BIO-6a **Least Bell's Vireo Pre-Construction Surveys and Avoidance.** Habitat with potential to support least Bell's vireo within the Project alignment consists of southern willow scrub, tamarisk scrub (adjacent to southern willow scrub), and mule fat scrub. Construction activities (i.e., earthwork, clearing, and grubbing) within 500 feet of potential least Bell's vireo habitat shall occur outside of the breeding season for least Bell's vireo (March 15 through August 31).

If construction activities (i.e., earthwork, clearing, grubbing, etc.) are proposed within 500 feet of least Bell's vireo habitat during the breeding season, focused protocol surveys for least Bell's vireo shall be conducted prior to commencement of construction activities, within all suitable habitat located in the Project area, along with a 500-foot buffer where suitable habitat occurs, to determine whether the habitat is occupied. Habitat within the 500-foot buffer that is not accessible will be surveyed audibly from the accessible limits. Focused surveys for least Bell's vireo shall be conducted by a qualified biologist and during the breeding season in accordance with the most recent USFWS guidelines. Current survey guidelines require eight surveys 10 days apart from April 10 to July 31. The results of the focused surveys shall be documented by the qualified biologist and submitted to USFWS and/or CDFW.

If the qualified biologist determines that least Bell's vireo do not occur within 500 feet of the proposed construction, the activities shall be allowed to proceed without any further requirements. If the qualified biologist determines that the habitat is occupied by least Bell's vireo, EMWD shall clearly delineate the required avoidance buffer around the active least Bell's vireo nest. The buffer shall be clearly marked with flags and/or fencing prior to the

initiation of construction activities. For work that is to occur within 500 feet of the occupied habitat, then EMWD shall follow mitigation measures **BIO-6b, 12, and 14.**

BIO-6b **Least Bell's Vireo Mitigation.** If construction activities are proposed within 500 feet of an occupied nest, a biological monitor shall be required to observe the behavior of breeding least Bell's vireo where accessible. The construction supervisor shall be notified if the construction activities appear to be altering the birds' normal breeding behavior. No construction activities will be allowed within 500 feet of an occupied nest until additional minimization measures have been performed. For habitat that is accessible, such measures may include retaining a qualified acoustician to determine ambient noise levels and Project-related noise levels at the edge of the occupied habitat. Noise levels at the edge of the occupied habitat shall not exceed an hourly average of 60 A-weighted decibels (dB[A]), or a 3 dB(A) increase in noise levels if ambient noise levels exceed 60 dB(A). If Project-related noise levels at the edge of the occupied habitat are above 60 dB(A) or the 3 dB(A) increase in noise occurs or the habitat is not accessible for measuring the noise levels, additional minimization measures shall be taken to reduce Project-related noise levels to an acceptable level as determined by the biological monitor. Measures may include, but are not limited to, limitation on the use of certain equipment, placement of equipment, restrictions on the simultaneous use of equipment, or use of noise barriers or other noise attenuation methods as deemed appropriate by the biologist and acoustician. If the biological monitor determines the construction activities are posing a potential risk to the nest after implementing the additional minimization measures, the noise-generating construction activities shall cease until alternative methods are applied or the breeding season is over. The biological monitor shall prepare written documentation of all monitoring activities at the completion of construction activities, which shall be submitted to EMWD.

BIO-7 **Stephens' Kangaroo Rat HCP Mitigation Fee.** The Project is within the limits of the Stephens' Kangaroo Rat HCP Plan Area. Prior to issuance of a grading permit, EMWD shall pay the SKR Mitigation fee of $500 per acre of impact to the Riverside County Habitat Conservation Agency.

BIO-8a **San Bernardino Kangaroo Rat Habitat Mapping and Surveys.** The Project alignment is located within potentially suitable San Bernardino kangaroo rat habitat. Prior to initiating construction activities within potentially suitable San Bernardino kangaroo rat habitat, EMWD shall retain a USFWS-permitted biologist to conduct a habitat assessment along the Project alignment and a 100-foot buffer, where access allows, to map the areas of potential habitat. The permitted biologist shall then conduct protocol surveys to confirm the presence or absence of the species. The survey efforts shall consist of live trapping within suitable habitat over five consecutive nights. If San Bernardino kangaroo rat are confirmed to be absent within the planned construction areas and a 100-foot buffer where access permits, then no additional measures shall be required. If the results of the protocol surveys determine the presence of San Bernardino kangaroo rat, then EMWD shall implement mitigation measures **BIO-3b, 8b, 14, and 16**.

BIO-8b **San Bernardino Kangaroo Rat Habitat Mitigation.** If the results of the protocol surveys of **BIO-3a and 8a** determine the presence of San Bernardino kangaroo rat, then EMWD shall implement mitigation measure **BIO-3** and conduct required monitoring pursuant to mitigation measure **BIO-14** unless otherwise prescribed by the USFWS through the

implementation of mitigation measure **BIO-3b**. In addition, EMWD shall implement contractor/crew training and construction staging pursuant to mitigation measure **BIO-18.**

BIO-9 **Quino Checkerspot Butterfly Pre-Construction Surveys and Avoidance.** Focused surveys for Quino checkerspot butterfly shall be conducted in appropriate habitat regardless of the presence or absence of host plants. Mapping of QCB host plants (dwarf plantain [*Plantago erecta*], white snapdragon ([*Antirrhinum coulterianum*], woolly plantain [*Plantago patagonica*], and Chinese houses [*Collinsia concolor*]) shall be conducted. The mapping of the host plant can occur concurrently with the habitat assessment of mitigation measure **BIO-1**, the rare plant survey of measure **BIO-2a**, or as part of the focused species survey included with the habitat assessment and surveys of mitigation measures **BIO-1 and 2a**. Following the mapping of QCB host plants, focused surveys shall be conducted in appropriate habitat regardless of the presence or absence of host plants. Habitats in the Project that require QCB surveys include grasslands, Riversidean sage scrub (including disturbed), and upland mustard and star thistle fields. USFWS protocol QCB surveys will be conducted. This consists of weekly surveys from the third week of February for a minimum of five weeks. If QCB is observed within the first five weeks, surveys can be discontinued. If QCB have not been observed, then surveys shall continue until QCB have been observed or until the second Saturday in May. If surveys are negative for QCB, no mitigation is required. If QCB are present, then EMWD shall implement mitigation measure **BIO-3a**.

BIO-10a **Burrowing Owl Survey and Pre-Construction Burrowing Owl Survey.** EMWD shall have a qualified biologist conduct a burrowing owl survey in accordance with the current protocol at the time of the survey. At the time of this report, the survey would follow the CDFW 2012 staff report for burrowing owl mitigation unless the Project has elected to be a Participating Special Entity (PSE) under the MSCHP, then the survey would follow the 2006 burrowing owl instruction for the MSHCP. Both survey guidelines require a minimum of four surveys to occur. The CDFW 2012 guideline requires the first survey to occur between February 15 and April 15, and the final survey to occur between June 15 and July 15. The 2006 MSHCP instructions require the four surveys to occur between March 1 and August 31 and does not specify specific date periods for each survey. Additionally, 14-day and 24-hour pre-construction surveys for burrowing owls are required by the CDFW 2012 guidelines (or a single survey 30-days prior if Project is a PSE) prior to initial ground-disturbing activities (e.g., vegetation clearing, clearing and grubbing, grading, tree removal, site watering, equipment staging) to ensure that no owls have colonized the site in the days or weeks preceding the ground-disturbing activities. If burrowing owl are not detected during the pre-construction survey, no further action is required. If burrowing owl are detected, then EMWD will follow mitigation measures **BIO-3a, 10b, and 14.**

BIO-10b **Burrowing Owl Mitigation.** If BUOW is observed during the focused surveys or the pre-construction survey, active burrows shall be avoided by the Project in accordance with the CDFW's *Staff Report on BUOW Mitigation* (2012) or CDFW's most recent guidelines. The current avoidance distance in the CDFW 2012 guidelines is 165 feet between October 16 to March 31 and 650 feet from April 1 to October 15. No work shall occur within the buffer zone unless approved by CDFW. The Project proponent shall inform the CDFW of BUOW observations. A BUOW Protection and Relocation Plan (plan) shall be prepared by a qualified biologist, which must be sent for approval by CDFW prior to initiating ground disturbance. The Burrowing Owl Protection and Relocation Plan shall include the number and location of

occupied burrow sites and details on proposed buffers if avoiding the burrowing owls or information on the adjacent or nearby suitable habitat available to owls for relocation. If no suitable habitat is available nearby for relocation, details regarding the creation and funding of artificial burrows (numbers, location, and type of burrows) and management activities for relocated owls shall also be included in the Burrowing Owl Protection and Relocation Plan. Relocation, if necessary, shall only occur outside of the nesting season (September 1 through January 31).

The Burrowing Owl Protection and Relocation Plan shall describe proposed avoidance (setback), shelter in place, relocation, monitoring, minimization, and/or mitigation actions. EMWD shall implement the Burrowing Owl Protection and Relocation Plan following CDFW and USFWS review and approval. Avoidance and minimization measures may include:

Setback: No construction activities shall occur within 500 feet of occupied burrows during the breeding season (February 1 to August 31) or within 250 feet of occupied burrows during the nonbreeding season (September 1 to January 31). When setback distances are applied to occupied burrows, an intensive monitoring program will be implemented to ensure that the setback distance applied to the burrow is considered an effective buffer. Once a setback distance is applied to an occupied burrow, the biological monitor will be present at all times during construction activities that occur adjacent to the setback distance to monitor the burrowing owl's behavior. A setback would be implemented during the breeding season for occupied burrows located within the Project footprint and off-site occupied burrows located within 300 feet or less, and during the nonbreeding season for off-site occupied burrows located within 150 feet or less of the Project footprint.

The biological monitor will have the authority to increase the setback distance if the construction activities are affecting the burrowing owl. If the buffer is determined to be ineffective, the buffer will be increased to the maximum recommended distances listed in the revised Staff Report on Burrowing Owl Mitigation (CDFW 2012). Setback distances may be reduced through Shelter in Place methods described below, which would be determined by the biological monitor.

Shelter in Place: If the established buffer is determined to be ineffective or a reduced setback is needed to complete construction, shelter in place can be implemented to minimize impacts while allowing existing burrows to remain intact. Where appropriate, the setback buffers may be reduced by screening burrows (i.e., installing hay bales to create a visual and auditory barrier between construction and the burrow) to minimize disturbance. During the breeding season, hay bales (or other similar material) will be stacked up to three bales high and 25 feet on either side of the burrow for a total of 50 feet. During the non-breeding season, hay bales will be stacked up to two bales high and 25 feet on either side of the burrow for a total of 50 feet. Hay bales are generally three feet long and 18 inches tall. A minimum distance of five feet between the hay bales and the occupied burrow will be left, allowing for perches near the burrow to be maintained. The minimum distance may be increased depending on the slope and topography of the area adjacent to the burrows.

If shelter in place is determined feasible, the biological monitor will provide guidance to the construction contractor regarding the location of the hay bales. During and following installation of the hay bales, a biological monitor will be present daily to evaluate the

effectiveness of the hay bales, monitor burrowing owl behavior for signs of stress or disturbance due to construction, and make adjustments to the buffer and/or hay bales in order to minimize impacts on the burrowing owl. If the burrowing owl continues to appear distressed from construction, the biological monitor will have the authority to halt construction until EMWD and CDFW can be contacted to determine the best course of action. Following installation of the hay bales, the biological monitor will provide a report to EMWD and CDFW describing the installation time frame; a map of the area; photographs of hay bales and construction activities; and a description of site conditions (e.g., surrounding vegetation, topography, observed species, burrowing owl line-of-sight conditions).

The qualified biologist and Project proponent shall coordinate with EMWD, CDFW, and USFWS to develop a Burrowing Owl Plan to be approved by EMWD, CDFW, and USFWS prior to commencing Project activities.

If burrowing owls are observed within study area(s) during Project implementation and construction, EMWD shall notify CDFW immediately in writing within 48 hours of detection. A Burrowing Owl Protection and Relocation Plan shall be submitted to CDFW for review and approval within two weeks of detection and no Project activity shall continue within 500 feet of the active burrowing owl burrows during the breeding season of February 1 to August 31 or if young are present, or within 250 feet during the non-breeding season, until CDFW approves the Burrowing Owl Protection and Relocation Plan. EMWD shall be responsible for implementing appropriate avoidance and mitigation measures, including burrow avoidance, setbacks, shelter in place, passive or active relocation, or other appropriate mitigation measures as identified in the Burrowing Owl Protection and Relocation Plan and discussed above.

If ground-disturbing activities occur but the site is left undisturbed for more than 14 days (30 days if a PSE under MSHCP), a pre-construction survey for burrowing owl shall be conducted and reported to CDFW as described above. If a burrowing owl is found, the same coordination described above shall be necessary.

A final letter report shall be prepared by the qualified biologist documenting the results of the passive relocation. The letter shall be submitted to CDFW prior to the start of Project activities.

BIO-11 **Crotch's Bumble Bee Surveys.** EMWD shall have a qualified biologist map potential Crotch's bumble bee habitat as part of the surveys conducted under **BIO-1**. A qualified biologist shall conduct focused CBB surveys according to the currently accepted CDFW survey protocol. The currently accepted survey protocol consists of a minimum of three surveys spaced two to four weeks apart between February 1 and October 30. The report documenting the survey shall be submitted to CDFW at least 60 days prior to initiating construction activities.

If CBB are observed during the focused survey, the location shall be marked and a 100-foot-radius buffer established. The buffer shall be mapped as an environmentally sensitive area (ESA). If impacts within the ESA are required, EMWD shall consult with CDFW per mitigation measures **BIO-3b, 14, and 18.**

BIO-12 **Construction-Related Noise.** Construction noise created during the general bird breeding season (February 15 to August 31) that could affect the breeding of the coastal California

gnatcatcher and/or least Bell's vireo shall be avoided. No loud construction noise (exceeding a 60 dBA hourly average or a 3 dBA increase to the ambient noise level if it already exceeds the 60 dBA hourly average, adjusted for ambient noise levels, at the nesting site) may take place within 500 feet of active CAGN and/or LBVI nesting sites during the general breeding season.

If it is confirmed through the implementation of mitigation measures **BIO-1, 3a and b, 4, 5, 6a and b, and 8** that construction activities could generate construction-related noise in excess of 60 dBA or a 3 dBA increase to the ambient noise level if it already exceeds the 60 dBA hourly average at the location of an occupied nest during the general breeding season for coastal California gnatcatcher and/or least Bell's vireo, EMWD shall implement noise mitigation and monitoring measures to ensure the noise levels do not exceed these limits and will not have a negative effect on the species. Measures include setbacks from habitat, noise walls, mufflers on equipment directing noise away from protected habitat, or other noise reduction methods. Additionally, EMWD shall retain a qualified biologist to monitor the construction operations. The biological monitor shall be present to monitor construction activities that occur within 500 feet of habitat in which active nests occur. The monitor shall verify that construction noise levels are not having a negative effect on the nesting birds. If a negative effect is detected the biologist shall have the ability to halt construction work until additional protection measures are properly implemented during construction or the nest is no longer active. The biologist shall report any violation to USFWS and/or CDFW, as applicable, within 24 hours of its occurrence.

BIO-13 **Construction Staging Areas.** If it is confirmed through the implementation of mitigation measures **BIO-1, 2, 3a, 4, 5, 6a, 9, 10a, or 11** that the Project would occur immediately adjacent to sensitive habitat areas and/or habitat potentially suitable for special-status species, EMWD shall design the final Project construction staging areas such that no staging areas shall be located within sensitive habitat areas. The construction contractor shall receive approval by EMWD prior to mobilization and staging of equipment outside of the Project boundaries.

BIO-14 **Biological Construction Monitoring and Temporary Construction Fencing.** If it is confirmed through the implementation of mitigation measures **BIO-1, 2, 3a, 4, 5, 6a, 9, 10a, or 11** that the Project would occur immediately adjacent to sensitive habitat areas (including waters) and/or habitat potentially suitable for special-status species, then EMWD shall retain a qualified biologist to monitor construction activities and supervise the installation of temporary construction fencing, which clearly delineates the edge of the approved limits of grading and clearing, and the edges of environmentally sensitive areas that occur beyond the approved limits. This fencing shall be installed prior to construction and maintained for the duration of construction activity. Fencing shall be installed in a manner that does not impact habitats to be avoided. Once the fencing is installed, EMWD and qualified biologist shall determine the need for additional inspections and monitoring activities throughout the duration of construction, not to be less than once per week. If determined necessary by EMWD and the qualified biologist, the monitoring shall include the inspection of construction work areas, including staging and storage areas, to confirm that activities are kept within the approved limits and that Best Management Practices are in place to prevent incidental animal entrapment and burrow and nest establishment within equipment and staged materials. If work occurs beyond the fenced or demarcated limits of impact, or if a

trapped animal or burrow or nest is found, work in the affected areas shall cease until the problem has been remedied and mitigation identified by EMWD and the qualified biologist. Temporary construction fencing shall be removed upon completion of construction of the Project. EMWD shall verify the implementation of this measure prior to and concurrently with construction.

BIO-15 **Fairy Shrimp Survey.** Prior to impacts to potential ephemeral pools or other similar habitats (Basins), EMWD shall have pools assessed for the potential to support sensitive fairy shrimp species. If the pools do have potential to support sensitive fairy shrimp species and are not proposed to be avoided, EMWD shall have a permitted fairy shrimp biologist conduct a USFWS protocol fairy shrimp survey that includes both wet and dry season surveys. Should sensitive fairy shrimp occur, potential impacts will be addressed via mitigation measure **BIO-2.** Potential impacts to the pools would be addressed in the permitting in mitigation measures **BIO-14, 19a, and b**.

BIO-16 **Revegetation of Sage Scrub and Upland Sensitive Natural Communities.** Prior to impacts to upland habitats, a biologist shall make a list of native plants occurring in each community. Temporary impacts to upland sensitive natural communities will be reseeded with a seed mix comprised of species observed within the habitat being impacted. Additionally, native-dominated vegetation being cleared and grubbed (duff) will be collected, stored on-site, and pulled back over the disturbed area after construction to allow for passive restoration over time. Permanent impacts to occupied habitats shall be addressed under mitigation measure **BIO-3b**.

BIO-17 **Night Lighting.** The Project will not work at night in proximity to undeveloped land to the greatest extent feasible. If working at night is unavoidable, lighting will avoid illuminating habitat outside the work area to limit indirect impacts to nocturnal species.

BIO-18 **Worker Environmental Awareness Program.** If it is confirmed through the implementation of mitigation measures **BIO-1, 2a, 3a, 4, 5, 6a, 8a, 9, 10a, 11, and 15** that the Project would occur immediately adjacent to sensitive habitat areas and/or habitat potentially suitable for special-status species, EMWD shall retain a qualified biologist to attend pre-construction meetings to inform construction crews of the sensitive resources and associated avoidance and/or minimization requirements.

BIO-19a **Acquire Permits for Impacts to Jurisdictional Features.** Prior to construction or ground-disturbing activities occurring within jurisdictional aquatic resources for any phase or component of the Project, the Project proponent shall apply for and obtain the following regulatory permits and approvals from the USACE, RWQCB, and/or CDFW, as applicable:

- Clean Water Act Section 404 Permit;
- Clean Water Act Section 401 Water Quality Certification; or a Waste Discharge Requirement (WDR) under the Porter Cologne Act and/or
- California Fish and Game Code Section 1602 Streambed Alteration Agreement.

The RWQCB regulates waters under the Porter-Cologne Act via a WDR when those waters are not regulated under Clean Water Action Section 404. If EMWD elects to seek incidental take authorization through the MSHCP PSE process, EMWD shall also prepare a

Determination of Biologically Equivalent or Superior Preservation (DBESP) for impacts to MSHCP Section 6.1.2 Riparian and Riverine Areas for approval by the RCA, USFWS, and CDFW.

BIO-19b **Mitigation for Jurisdictional Impacts.** The Project proponent shall mitigate impacts to jurisdictional aquatic resources off-site at a minimum 1:1 ratio. Temporary impacts are to be restored in place and permanent impacts to include a minimum 1:1 establishment/re-establishment component, unless otherwise negotiated by EWMD with the regulatory agencies.

6.8 NON-METROPOLITAN ALTERNATIVE ALIGNMENT IMPACTS

6.8.1 Impacts

Non-Metropolitan Alternative impacts would be similar to the selected alignment. Construction zone widths would be the same for both alignments. The difference is that for a portion of the alignment, The proposed alignment would not require trenching where it is utilizing the existing pipeline for the alignment.

Special-status (sensitive) species potential impacts would be similar to that of the selected alignment. The main difference is that the impacts to vernal pool sensitive species have lower potential to occur and impacts to CAGN have higher potential to occur. Mitigation measures related to sensitive plant and animals for the selected alignment would all still apply to Non-Metropolitan Alternative. the mitigation measures incorporated would also apply to the vernal pool species and CAGN that may occur.

The Non-Metropolitan Alternative alignment impacts include direct and indirect impacts to habitat with potential to support BUOW, CAGN, LBVI, QCB, nesting birds (including raptors), SBKR, and SKR; therefore, **t**he appropriate mitigation measures in this report would also apply to Non-Metropolitan Alternative. Potential impacts to sensitive habitats, waters and wetlands may also occur within the alignment of Non-Metropolitan Alternative, so mitigation measure **BIO-19a** would apply. Alignment 2A crosses the same MSHCP proposed constrained linkages as the selected alignment and the aforementioned mitigation measures would apply.

6.8.2 Mitigation Measures

Mitigation measures, described above for the proposed Project, would also apply to the vernal pool species and CAGN that may occur.

6.8.3 Conclusion

Impacts for Non-Metropolitan Alternative would be reduced to a less than significant level with implementation of the incorporated mitigation measures.

7.0 NATIONAL ENVIRONMENTAL PROTECTION ACT

7.1 FEDERAL ENDANGERED SPECIES ACT, SECTION 7

Does the project involve any direct effects from construction activities, or indirect effects such as growth inducement that may affect federally listed threatened or endangered species or their critical habitat that are known, or have a potential, to occur on site, in the surrounding area, or in the service area?

7.1.1 Analysis

The Project alignment primarily occurs along existing roadway and existing pipeline ROW but also includes potential impacts to non-native grassland, sage scrub, disturbed land, and riparian and riverine habitats. The Project also crosses or is adjacent to two proposed linkages and proposed core of the MSHCP. The Project alignment does not occur within or immediately adjacent to designated Critical Habitat. Critical Habitat (CH) for coastal California gnatcatcher (*Polioptila californica californica*; CAGN) occurs approximately one quarter mile east of the alignment and half mile to the west in the vicinity of Diamond Valley Lake, Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) occurs just over one-quarter mile away from the southern end, and spreading navarretia (*Navarretia fossalis*) occurs approximately 1.5 miles west of the Project area (Figure 6).Therefore, the proposed action would have no effect on CH.

The Project has potential to result in impacts to federally-listed CAGN where the Project crosses an area of coastal sage scrub between Auld Road and Benton Road. Direct impacts could occur as a result of removal of vegetation supporting an active nest and from a loss of foraging habitat. Indirect effects could occur as a result of construction noise in the immediate vicinity of undeveloped areas supporting an active nest, such that the disturbance results in nest abandonment or nest failure. Implementation of measures **BIO-1, 3a and b, 5, 13, 14, and 18,** would reduce the impacts to less than significant.

The Project has potential to result in impacts to the federally-listed least Bell's vireo (*Vireo bellii pusillus*; LBVI) at two locations, one at the southern end of the alignment along Auld Road and the second located south of Thompson Road. Both locations have southern willow scrub both within and adjacent to the study area that has potential to support LBVI. Direct impacts could occur from the removal of southern willow scrub or adjacent vegetation that supports LBVI. Indirect effects could occur as a result of construction noise in the immediate vicinity of undeveloped areas supporting an active nest, such that the disturbance results in nest abandonment or nest failure. Implementation of measures **BIO- 1, 3a and b, 4, 6a and b, 13, 14, and 18** would reduce the potential impacts to less than significant.

The Project has potential to result in impacts to the federally-listed QCB in the unsurveyed area between Scott Road and Patterson Road. QCB host plants were not observed along other areas of the alignment. Direct impacts could occur as a result of removal of scrubland habitat, Riversidean sage scrub, or host plant and nectar source vegetation that support QCB. Implementation of measures **BIO-1, 3a and b, 9, 13, 14, 16, and 18,** would reduce the impacts to less than significant.

Further discussion is provided below regarding potential effects of the proposed action on federally-listed species.

Federally-Listed Plant Species. One federally-listed plant species has moderate potential to occur, the federal endangered Munz's onion. Six listed species, the federally endangered and state threatened San Diego button-celery, California Orcutt grass, federal endangered San Diego Ambrosia, San Jacinto Valley crownscale, federally threatened and state endangered thread-leaved brodiaea, and federally threatened spreading navarretia, have low potential to occur. No additional federally-listed endangered (FE), threatened (FT), or candidate (FC) plant species have the potential to occur in the vicinity of the study area. Measures **BIO-1, 2a and b, 14, and 18,** shall be implemented to avoid impacts to federally-listed plants.

Federally-Listed Animal Species. In total, seven FE animal species and two FT animal species have potential to occur within the study area (Appendix F):

- Least Bell's vireo; FE present adjacent to alignment
- Coastal California gnatcatcher; FT high
- Stephens' kangaroo rat; FE moderate
- Vernal pool fairy shrimp; FT moderate
- Riverside fairy shrimp; FE moderate
- San Bernardino kangaroo rat; FE low
- Quino checkerspot butterfly; FE low
- San Diego fairy shrimp; FE low
- western pond turtle; PT low

As discussed above, the Project would have no effect on critical habitat for federally-listed species as critical habitat does not occur within or immediately adjacent to the study area. The Project has potential for direct impacts to habitat with potential to support CAGN, QCB, SKR, and SBKR. These potential impacts would be mitigated via mitigation measures **BIO-1, 2a and b, 3a and b, 5, 6a and b, 7, 8a and b, 9, 12, 14, 15, 16, and 18,** The Project does not propose direct impacts to habitat for least Bell's vireo but has potential to have indirect effects. Potential indirect effects would be mitigated via mitigation measures **BIO-1, 3a and b, 6a and b, 12, 14, and 18.**

The Project has potential to result in adverse impacts to foraging habitat for the western mastiff bat (*Eumops perotis californicus*), which is federally listed as a species of least concern. The species prefers to roost on high cliffs or tall buildings that do not occur within the study area. The species will forage in open arid habitats such as grasslands, sage scrub, and various woodland that do occur within the Project limits. The Project would implement mitigation that restricts working at night including mitigation measure **BIO-17** to avoid potential impacts to foraging bats.

7.1.2 Mitigation Measures

Administered with the implementation of mitigation measures**,** the proposed action would have no effect or a less than significant effect on federally-listed species or their critical habitat, and the Project would be in conformance with the FESA.

7.1.3 Conclusion

The Project would have no direct or indirect adverse effect on critical habitat with the implementation of recommended measures.

7.2 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT, ESSENTIAL FISH HABITAT

Does the project involve any direct effects from construction activities, or indirect effects such as growth inducement that may adversely affect essential fish habitat?

7.2.1 Analysis

The Project would be constructed within upland areas that lack marine resources and Essential Fish Habitat regulated under the Magnuson-Stevens Fishery Conservation and Management Act. No Essential Fish Habitat occurs in the immediate vicinity of the study area. Therefore, the Project would have no effect on Essential Fish Habitat and would be in conformance with the Magnuson-Stevens Fishery Conservation and Management Act.

7.2.2 Mitigation Measures

No mitigation is required.

7.2.3 Conclusion

The Project would have no direct or indirect adverse effect on essential fish habitat.

7.3 COASTAL ZONE MANAGEMENT ACT

Is any portion of the project site located within the coastal zone?

7.3.1 Analysis

The study area is not located within the Coastal Zone. The western portion of the study area is located more than 30 miles from the nearest Coastal Zone boundary. No coastal habitat occurs in the immediate vicinity of the study area. Therefore, the Project would have no effect on any areas designated as Coastal Zone and would be in conformance with the Coastal Zone Management Act.

7.3.2 Mitigation Measures

No mitigation is required.

7.3.3 Conclusion

The Project would have no direct or indirect adverse effect on areas designated as Coastal Zone.

7.4 MIGRATORY BIRD TREATY ACT

Will the project affect protected migratory birds that are known, or have a potential, to occur on site, in the surrounding area, or in the service area?

7.4.1 Analysis

Construction of the proposed Project may result in the removal or trimming of trees and other vegetation during the general bird nesting season (January 15 through September 15) and, therefore, would have the potential to adversely affect nesting birds protected under the MBTA. Implementation of mitigation measures **BIO-4 and 18** would ensure the appropriate pre-construction surveys and avoidance measures are completed to prevent adverse effects on nesting birds. With the implementation of mitigation measures, the Project would result in no effect on migratory birds and would be in conformance with the MBTA.

7.4.2 Mitigation Measures

Mitigation measure **BIO-4 and 18** would ensure the appropriate pre-construction surveys and avoidance measures are completed to prevent adverse effects on nesting birds.

7.4.3 Conclusion

Implementation of mitigation measure **BIO-4 and 18** would ensure that the Project would not have an adverse effect on nesting birds.

7.5 PROTECTION OF WETLANDS

Does any portion of the project boundaries contain areas that should be evaluated for wetland delineation or require a permit from the United States Army Corps of Engineers?

7.5.1 Analysis

The majority of the Project occurs within existing roadways or pipeline ROW but the Project does include crossing several streams/drainages and also occurs adjacent to riparian habitat. Potential impacts to waters of the U.S. subject to the regulatory jurisdiction of the USACE shall be mitigated via the use of mitigation measures **BIO-1, 18, 14, and 19a and b,** to reduce potential impacts to less than significant.

7.5.2 Mitigation Measures

Measure **BIO-1, 14, 18, 19a and b** would be required to minimize impacts to wetlands.

7.5.3 Conclusion

Implementation of measures **BIO-1, 14, 18, and 19a and b** would ensure the Project would not have an adverse effect on wetlands.

7.6 WILD AND SCENIC RIVER ACT

Is any portion of the project located within a wild and scenic river?

7.6.1 Analysis

None of the proposed Project components are planned on or in the immediate vicinity of areas designated as Wild and Scenic River. Therefore, the proposed Project would have no effect on any areas designated as wild and scenic river and would be in conformance with the Wild and Scenic Rivers Act.

7.6.2 Mitigation Measures

No mitigation is required.

7.6.3 Conclusion

The Project would not result in adverse impacts to wild and scenic rivers.

8.0 CERTIFICATION/QUALIFICATION

The following individuals contributed to the fieldwork and/or preparation of this report.

Taylor Chase	B.S., Environmental Protection and Management, California Polytechnic State University, San Luis Obispo, 2016
Kacee Morell	M.S., Environmental Policy and Management, University of Denver, 2020 B.S., Plant Science, California Polytechnic State University, Pomona, 2018
Cache Tucker	B.A., Business, Minor in Anthropology, California State University, Fullerton, 2012 A.S., Natural Resources, College of the Desert, 2013
Rob Hogenauer*	B.S., Biology, California Polytechnic State University, Pomona, 2004
Karl Osmundson	B.S., Wildlife, Fish, and Conservation Biology, University of California, Davis, 2003
Amir Morales	B.S., Hydrological Sciences, Minor in Geographical Information Systems, University of California, Santa Barbara, 2001

*Principal Author

9.0 REFERENCES

American Ornithological Society. 2024. Checklist of North American Birds (online). American Ornithological Society. Retrieved from: http://checklist.aou.org/taxa/. Accessed May 20, 2025.

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson Manual: Vascular Plants of California, second edition. University of California Press, Berkeley.

Bradley, R.D., L.K. Ammerman, R.J. Baker, L.C. Bradley, J.A. Cook, R.D. Dowler, C. Jones, D.J. Schmidly, F.B. Stangi, R.A. Van De Bussche, B. Wursig. 2014. Revised checklist of North American Mammals.

California Department of Fish and Wildlife (CDFW). 2025a. California Natural Diversity Data Base (CNDDB). Special Vascular Plants, Bryophytes, and Lichens List. Retrieved from: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline. April.

2025b. RareFind Database Program, Version 5.

2025c. California Natural Diversity Database (CNDDB). Special Animal List. Retrieved from: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline. April.

2012. *Staff Report on Burrowing Owl Mitigation*. Retrieved from: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843.

Calflora. 2025. Retrieved from: https://www.calflora.org/index.html. Accessed May 20, 2025.

California Native Plant Society (CNPS), Rare Plant Program. 2025a. Inventory of Rare and Endangered Plants (online edition, v8-03 0.39). California Native Plant Society, Sacramento, CA. Retrieved from: http://www.rareplants.cnps.org/ Accessed May 20, 2025.

2025b. A manual of California Vegetation Online. https://vegetation.cnps.org/. Accessed May 20, 2025.

2020. Considerations for Including CRPR 4 Plant Taxa in CEQA Biological Resource Impact Analysis. Online: https://www.cnps.org/wp-content/uploads/2020/02/crpr4_technical_memo.pdf. Accessed January 7, 2026.

Faber-Langendoen, D., J. Nichols, L. Master, K. Snow, A. Tomaino, R. Bittman, G. Hammerson, B. Heidel, L. Ramsay, A. Teucher, and B. Young. 2012. NatureServe Conservation Status Assessments: Methodology for Assigning Ranks, Revised Edition. June. Retrieved from: http://www.natureserve.org/sites/default/files/publications/files/natureserveconservationstatusmethodology_jun12_0.pdf.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency, 156 pp.

Jepson Flora Project (eds.) 2025. Jepson eFlora. Retrieved from: http://ucjeps.berkeley.edu/eflora/.

Natural Resources Conservation Service (NRCS). 2019. Web Soil Survey. United States Department of Agriculture (USDA). Retrieved from: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.Aspx. Accessed May 20, 2025.

North American Butterfly Association. 2025. Checklist of North American Butterflies Occurring North of Mexico, Edition 2.3. Retrieved from: https://naba.org/butterfly-names-checklist/. Accessed May 20, 2025.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," R. F. Holland, Ph.D., October 1986. March. Revised from 1996 and 2005. July.

Regional Conservation Authority (RCA) 2003. Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Final MSHCP Volume I. Prepared for County of Riverside, Transportation and Land Management Agency. Retrieved from: https://rctlma.org/western-riverside-county-multiple-species-habitat-conservation-plan-mshcp-1.

RCHCA. 2025. Stephen's kangaroo rat Mitigation Fee. Online. https://www.rchca.us/185/Stephens-Kangaroo-Rat-Mitigation-Fee. Accessed August 25, 2025.

Sawyer, J., T. Keeler-Wolf, and J. Evans. 2009. A Manual of California Vegetation, Second 2nd Edition.

Society for the Study of Amphibians and Reptiles. 2025. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding. Ninth Edition. https://webapps.fhsu.edu/ksHerp/bibFiles/32018.pdf. Accessed May 16, 2025.

U.S. Fish and Wildlife Service (USFWS). 2025a. National Wetland Inventory, Wetlands Mapper. Retrieved from: https://www.fws.gov/wetlands/data/mapper.html. Accessed May 20.

2025b. IPaC Information for Planning and Consultation. Retrieved from: https://ipac.ecosphere.fws.gov/. Accessed May 20, 2025.

Appendix A

Soil Types

Soil Series	Percent Slopes (%)	Soil Type/Characteristic
Buren loam	2-8	eroded
Bosanko clay	2-8	n/a
	8-15	n/a
Buchenau silt loam	2-8	eroded
Cajalco fine sandy loam	2-8	eroded
	8-15	eroded
Cajalco rocky fine sandy loam	15-50	eroded
Chino silt loam	n/a	drained, strongly saline-alkali
Cieneba rocky sandy loam	8-15	eroded
	15-50	eroded
Cieneba sandy loam	5-8	n/a
Domino fine sandy loam	n/a	eroded
	n/a	saline-alkali
Domino silt loam	n/a	saline-alkali
	n/a	n/a
	n/a	strongly saline-alkali
Escondido fine sandy loam	8-15	eroded
Exeter sandy loam	0-2	n/a
	0-2	deep
	2-8	deep, eroded
	0-5	slightly saline-alkali
Fallbrook sandy loam	8-15	eroded
Fallbrook fine sandy loam	5-8	shallow, eroded
	8-15	eroded
Friant fine sandy loam	5-25	eroded
Grangeville fine sandy loam	0-2	drained
	0-5	drained
	0-5	saline-alkali
Grangeville loamy fine sand (GGr)	0-5	drained
Greenfield sandy loam	0-2	n/a
	2-8	eroded
Hanford course sandy loam	2-8	n/a
Hanford fine sandy loam	2-8	n/a
Honcut loam	2-8	eroded
Los Posas loam	2-8	n/a
	5-8	eroded
	8-15	eroded
Madera fine sandy loam	0-2	n/a
Monserate sandy loam	0-5	n/a
	5-8	eroded
	5-15	shallow, eroded
Porterville clay	0-5	moderately deep, slightly saline alkali
	0-8	n/a
	2-8	moderately deep
Porterville gravelly clay	2-15	moderately deep, eroded
Ramona sandy loam	2-5	eroded
	5-8	eroded
	8-15	severely eroded

Soil Series	Percent Slopes (%)	Soil Type/Characteristic
Vallecitos loam	2-8	thick solum variant, eroded
	8-15	n/a
Vista course sandy loam	2-8	n/a
	8-15	eroded
Wyman loam	2-8	eroded
Yohohl loam	2-8	n/a

Appendix B

Plant Species Observed

Family	Scientific Name	Common Name
ANGIOSPERMS – EUDICOTS		
Adoxaceae	*Sambucus mexicana*	blue elderberry
Apiaceae	*Bowlesia incana*	hoary bowlesia
Asteraceae	*Ambrosia psilostachya*	ragweed
	Artemisia californica	California sagebrush
	Baccharis pilularis	coyote brush
	Baccharis salicifolia	mule fat
	*Carduus pycnocephalus**	Italian thistle
	*Centaurea benedicta**	blessed thistle
	*Centaurea melitensis**	tocalote
	Centromadia pungens spp. *laevis*†	smooth tarplant
	*Cirsium vulgare**	bullthistle
	Corethrogyne filaginifolia	common sandaster
	Deinandra fasciculata	clustered tarplant
	Deinandra paniculata†	paniculate tarplant
	Encelia californica	bush sunflower
	Encelia farinosa	brittlebush
	Erigeron bonariensis	flax-leaved horseweed
	Ericameria sp.	ericameria
	Gnaphalium palustre	lowland cudweed
	Helianthus annuus	hairy leaved sunflower
	Heterotheca grandiflora	telegraph weed
	Isocoma menziesii	white flowered goldenbush
	*Lactuca serriola**	prickly lettuce
	Lasthenia californica	goldfields
	Layia platyglossa	coastal tidytips
	Logfia gallica	narrowleaf cottonrose
	*Matricaria chamomilla**	German chamomile
	*Matricaria discoidea**	pineapple weed
	*Oncosiphon piluliferum**	stinknet
	Psilocarphus brevissimus	woolly marbles
	Pulicaria paludosa	Spanish false fleabane
	*Senecio vulgaris**	common groundsel
	*Sonchus asper**	spiny sowthistle
	Stylocline gnaphaloides	everlasting nest straw
	Uropappus lindleyi	silver puffs
Boraginaceae	*Amsinckia intermedia*	common fiddleneck
	Cryptantha intermedia	common cryptantha
	Heliotropium curassavicum	salt heliotrope
	Nemophila menziesii	baby blue eyes
	Pectocarya linearis	sagebrush combseed
	Phacelia distans	common phacelia
	Phacelia minor	wild Canterbury-bell
	Phacelia ramosissima	branching phacelia
	Plagiobothrys collinus	Cooper's popcornflower
Brassicaceae	*Brassica nigra**	black mustard
	*Capsella bursa-pastoris**	shepherd's purse
	*Hirschfeldia incana**	shortpod mustard
	*Raphanus sativus**	wild radish
	*Sisymbrium irio**	London rocket

Family	Scientific Name	Common Name
Caryophyllaceae	*Spergularia marina*	salt marsh sand spurry
Chenopodiaceae	*Atriplex semibaccata**	australian saltbush
	*Bassia hyssopifolia**	five horn bassia
	*Salsola tragus**	russian thistle
Crassulaceae	*Crassula connata*	sand pygmy weed
Euphorbiaceae	*Croton setiger*	turkey-mullein
Fabaceae	*Acmispon glaber*	deerweed
	Acmispon strigosus	strigose lotus
	Lupinus bicolor	miniature lupine
	Lupinus succulentus	arroyo lupine
	*Medicago lupulina**	black medick
	*Medicago polymorpha**	bur clover
	*Melilotus indicus**	annual yellow sweetclover
	*Vicia villosa**	hairy vetch
Frankeniaceae	*Frankenia salina*	alkali-heath
Geraniaceae	*Erodium botrys**	big heron bill
	*Erodium cicutarium**	coastal heron's bill
Lamiaceae	*Marrubium vulgare*	white horehound
	Salvia apiana	white sage
	Salvia mellifera	black sage
	Trichostema lanceolatum	vinegarweed
Malvaceae	*Malva parviflora**	cheeseweed
	Malvella leprosa	alkali mallow
Montiaceae	*Calandrinia menziesii*	red maids
Myrsinaceae	*Lysimachia arvensis*	scarlet pimpernel
Myrtaceae	*Eucalyptus camaldulensis**	red gum
Nyctaginaceae	*Mirabilis laevis*	desert wishbone bush
Onagraceae	*Camissonia campestris*	field primrose
	Camissoniopsis bistorta	California sun cup
Papaveraceae	*Platystemon californicus*	cream cups
Plantaginaceae	*Nuttallanthus texanus*	blue toadflax
	*Plantago lanceolata**	ribwort
Phrymaceae	*Erythranthe guttata*	seep monkey flower
Polemoniaceae	*Gilia tricolor*	bird's eyes
	Navarretia hamata	hooked navarretia
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat
	Lastarriaea coriacea	leather spineflower
	*Polygonum aviculare**	prostrate knotweed
	*Rumex crispus**	curly dock
Salicaceae	*Salix gooddingii*	Goodding's willow
	Salix laevigata	polished willow
	Salix lasiolepis	red willow
Saururaceae	*Anemopsis californica*	yerba mansa
Scrophulariaceae	*Scrophularia californica*	California bee plant
Solanaceae	*Datura wrightii*	jimsonweed
	*Nicotiana glauca**	tree tobacco
Tamaricaceae	*Tamarix ramosissima**	tamarisk
Urticaceae	*Urtica dioica*	stinging nettle
ANGIOSPERMS – MONOCOTS		
Cyperaceae	*Cyperus involucratus*	umbrella plant

Family	Scientific Name	Common Name
Juncaceae	*Juncus balticus*	wire rush
Liliaceae	*Calochortus splendens*	splendid mariposa lily
Poaceae	*Avena barbata**	slender oat
	*Avena fatua**	wild oat
	*Bromus diandrus**	ripgut brome
	*Bromus hordeaceus**	soft chess
	*Bromus madritensis**	foxtail chess
	Distichlis spicata	salt grass
	*Festuca myuros**	rattail sixweeks grass
	*Festuca perennis**	Italian rye grass
	*Hordeum murinum**	foxtail barley
	*Hordeum vulgare**	common barley
	*Polypogon monspeliensis**	annual beard grass
	*Schismus barbatus**	common Mediterranean grass
Themidaceae	*Dipterostemon capitatus*	blue dicks
Typhaceae	*Typha domingensis*	cattail

* Non-native species

† Sensitive species

Appendix C

Animal Species Observed or Detected

Taxon Order	Taxon Family	Scientific Name	Common Name
INVERTEBRATES			
Hymenoptera	Formicidae	*Pogonomyrmex spp.*	harvester ant
VERTEBRATES			
Amphibians and Reptiles			
Squamata	Phrynosomatidae	*Sceloporus orcutti*	granite spiny lizard
	Phrynosomatidae	*Sceloporus occidentalis*	western fence lizard
	Phrynosomatidae	*Uta stansburiana*	common side-blotched lizard
	Teiidae	*Aspidoscelis hypertha*	orange-throated whiptail
Birds			
Passeriformes	Alaudidae	*Eremophila alpestris actia*†	California Horned Lark
	Corvidae	*Aphelocoma californica*	California scrub-jay
	Corvidae	*Corvus corax*	common raven
	Corvidae	*Carpodacus mexicanus*	house finch
	Fringillidae	*Picoides nuttallii*	Nuttall's woodpecker
	Tyrannidae	*Sayornis saya*	Say's phoebe
	Tyrannidae	*Sayornis nigricans*	black phoebe
	Vireonidae	*Vireo bellii pusillus*†	least Bell's vireo
Pelecaniformes	Pelecanidae	*Pelecanus erythrorhyncos*	American white pelican
Suliformes	Phalacrocoracidae	*Phalacrocorax auritus*	double-crested cormorant
Mammals			
Carnivora	Canidae	*Canis latrans*	coyote
Lagomorpha	Leporidae	*Sylvilagus audubonii*	desert cottontail
Rodentia	Sciuridae	*Spermophilus beecheyi*	California ground squirrel
	Geomyidae	*Thomomys bottae*	Botta's pocket gopher

† Sensitive

Appendix D

Rare Plant Species Potential to Occur

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Abronia villosa var. *aurita*	Chaparral sand-verbena	--/-- CNPS 1B.1	Annual herb. Occurs in sandy places within coastal scrubs, chaparral, and desert dunes. Not tolerant of weeds. Flowering period: March to September. Elevation: 246 to 5,249 feet (75 to 1,600 meters).	**Low:** Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of low quality due to significant weed species and/or small extent.
Allium marvinii	Yucaipa onion	--/-- CNPS 1B.2	Perennial bulbiferous herb. Occurs in openings in clay soils in chaparral. Known only from the Yucaipa and Beaumont area of the southern San Bernardino Mountains. Flowering period: April to June. Elevation: 2,495 to 3,495 feet (850 to 1070 meters).	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area, the study area is not within the elevation range of the species.
Allium munzii	Munz's onion	FE/ST CNPS 1B.1	Perennial herb. Occurs in clay, mesic habitat within chaparral, cismontane woodland, grassy openings in coastal scrub, pinyon and juniper woodland, and valley and foothill grassland in Riverside County. Flowering period: March to May. Elevation: 975 to 3,510 feet (297 to 1070 meters).	**Moderate Potential to Occur:** Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent.
Almutaster pauciflorus	Alkali marsh aster	--/-- CNPS 2B.2	Perennial herb. Occurs in alkaline soil in meadows and seeps in Kern, Riverside and Inyo County. Flowering period: June to October. Elevation: 785 to 2,625 feet (240 to 800 meters).	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area.
Ambrosia pumila	San Diego Ambrosia	FE/-- CNPS 1B.1	Perennial rhizomatous herb. Occurs in alkaline, clay, disturbed, loam and sandy soils. Found in chaparral, coastal scrub, valley and foothill grassland and vernal pools. Flowering period: April to October Elevation: 65 to 1,360 feet (20 to 415 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Amsinckia douglasiana	Douglas' fiddleneck	--/-- CNPS 4.2	Annual herb. Occurs in dry habitats within cismontane woodlands and valley and foothill grasslands. Flowering period: March to May. Elevation: 0 to 6,400 feet (0 to 1950 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Arctostaphylos rainbowensis	Rainbow manzanita	--/-- CNPS 1B.1	Perennial evergreen shrub. Occurs in chaparral in Riverside and San Diego County. Flowering period: December to March Elevation: 675 to 2200 feet (205 to 670 meters).	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area.
Astragalus pachypus var. *jaegeri*	Jaeger's milk-vetch	--/-- CNPS 1B.1	Perennial shrub. Occurs in rocky and sandy soils within chaparral, cismontane woodland, coastal scrub and valley and foothill grassland. Flowering period: December to June. Elevation: 1,200 to 3,200 feet (365 to 975 meters).	**Not Likely to Occur:** Habitat suitable for species survival does occur in study area but in small amounts. Species not observed during focused surveys.
Atriplex coronata var. *notatior*	San Jacinto Valley crownscale	FE/-- CNPS 1B.1	Annual herb. Found in alkaline soil in playas, valley and foothill grassland and vernal pools. Flowering period: April to August. Elevation: 455 to 1,640 feet (139 to 500 meters).	**Low Potential to Occur:** Several basins (ephemeral pools) occur in the study area, but are mostly within disturbed habitats.
Atriplex coulteri	Coulter's saltbush	--/-- CNPS 1B.2	Perennial herb. Occurs on alkaline or clay soils within coastal dunes, coastal bluffs, coastal sage scrub, and grasslands. Found along the coastal regions from Santa Luis Obispo County south to San Diego County, western portions of San Bernardino and Riverside counties, and the Channel Islands. Flowering period: March to October. Elevation: below 1,510 feet (460 meters).	**High Potential to Occur:** Species observed north of Auld Road and west of Washington Avenue in close proximity to project alignment. Possibly occurring in a clay inclusion as clay soils not mapped at this location.

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Atriplex parishii	Parish's brittlescale	--/-- CNPS 1B.1	Annual herb. Occurs in alkaline soil in chenopod scrub, playas and vernal pools. Flowering period: June to October. Elevation: 80 to 6,235 feet (25 to 1,900 meters).	**Low Potential to Occur:** Although playas do not occur in study area, several basins (ephemeral pools) do occur. The species has not been recorded recently on or near the study area.
Atriplex serenana var. *davidsonii*	Davidson's saltscale	--/-- CNPS 1B.2	Small annual herb. This species is historically associated with the isolated alkaline flats of southern California valley areas that have primarily been drained and converted to residential housing or agriculture. Flowering period: April to October. Elevation range: 0 to 656 feet (0 to 200 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Berberis nevinii	Nevin's barberry	FE/SE CNPS 1B.1	Perennial evergreen shrub. Occurs in gravelly and sandy soil in chaparral, cismontane woodland, coastal scrub and riparian scrub habitat. Flowering period: February/March to June. Elevation: 230 to 2,705 feet (70 to 825 meters).	**Not Likely to Occur.** Although suitable habitat is present on the study area it is of low quality and/or small extent. The species is conspicuous and would have been observed if present given the habitats within the study area. The species has not been recorded recently on or near the study area.
Brodiaea filifolia	Thread-leaved brodiaea	FT/SE CNPS 1B.1	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools.	**Low Potential to Occur:** Several basins (ephemeral pools) occur in the study area. The species was not observed during surveys for the current project.
Brodiaea santarosae	Santa Rosa Basalt brodiaea	--/-- CNPS 1B.2	Perennial bulbiferous herb. Grows in basaltic soil, in valley and foothill grassland habitat. Flowering period: May to June. Elevation: 1,855 to 3,430 feet (565 to 1,045 meters).	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area, the study area is not within the elevation range of the species.

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Calochortus plummerae	Plummer's mariposa-lily	--/-- CNPS 4.2	Perennial bulbiferous herb. Occurs in granitic and rocky soil, within chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland. Flowering period: May to July. Elevation: 330 to 5,580 feet (100 to 1,700 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Calochortus weedii var. *intermedius*	Intermediate mariposa-lily	--/-- CNPS 1B.2	Perennial bulbiferous herb. Occurs in rocky soils on open slopes, within chaparral, coastal scrub and valley and foothill grassland. Flowering period: May to July Elevation: 345 to 2,805 feet (105 to 855 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Caulanthus simulans	Payson's jewelflower	--/-- CNPS 4.2	Annual herb. Occurs in granitic and sandy soil in chaparral, coastal scrub and pinyon/juniper woodland habitats. Flowering period: February/March to May/June Elevation: 295 to 7,220 feet (90 to 2,200 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Centromadia pungens ssp. *laevis*	Smooth tarplant	--/-- CNPS 1B.1	Annual herb. Occurs in alkaline soil in open, poorly drained flats, depressions, waterway banks and beds, grassland and disturbed sites. Found within chenopod scrub, meadows and seeps, playas, riparian woodland and valley and foothill grassland habitats. Flowering period: April to September. Elevation: 0 to 2,100 feet (0 to 640 meters).	**Present:** The species was observed in and adjacent to Salt Creek during general biological surveys for the current project.

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Chorizanthe leptotheca	Peninsular spineflower	--/-- CNPS 4.2	Annual herb. Occurs in granitic soils within chaparral, coastal scrub, and lower montane coniferous forests. Flowering period: May to August. Elevation: 985 to 9235 feet (300 to 1900 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Chorizanthe parryi var. *parryi*	Parry's spineflower	--/-- CNPS 1B.1	Annual herb. Occurs in openings, within rocky and sandy soil in the following habitats: chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Flowering period: April to June Elevation: 900 to 4,005 feet (275 to 1,220 meters).	**Moderate Potential to Occur:** Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent.
Chorizanthe polygonoides var. *longispina*	Long-spined spineflower	--/-- CNPS 1B.2	Annual herb. Occurs often in clay soil, within chaparral, coastal scrub, meadows and seeps, valley and foothill grassland and vernal pool habitats. Flowering period: April to June. Elevation: 100 to 5,020 feet (30 to 1,530 meters).	**Moderate Potential to Occur:** Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent.
Clinopodium chandleri	San Miguel savory	--/-- CNPS 1B.2	Perennial shrub. Occurs in gabbroic and rocky soil, within chaparral, cismontane woodland, coastal scrub, riparian woodland and valley and foothill grassland. Flowering period: March to July. Elevation: 395 to 3,525 feet.	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Convolvulus simulans	Small-flowered morning-glory	--/-- CNPS 4.2	Annual herb. Found in clay and serpentinite soils and in seeps within chaparral, coastal scrub, and valley and foothill grasslands. Flowering period: March to July. Elevation: 100 to 2430 feet (30 to 740 meters).	**Moderate Potential to Occur:** Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent.
Cryptantha wigginsii	Wiggin's cryptantha	--/-- CNPS 1B.2	Annual herb. Occurs in semi-barren clay slopes, less commonly silty or occasionally silty-sand soil, coastal sage or maritime sage. Flowering period: February to June. Elevation: 65 to 900 feet (20 to 275 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Deinandra mohavensis	Mojave tarplant	--/SE CNPS 1B.3	Annual herb. Occurs in moist open sites, within chaparral, coastal and riparian scrub. Flowering period: January to May, June to October. Elevation: 2,100 to 5,250 feet (640 to 1,600 meters).	**Not Likely to Occur:** Habitat suitable for species survival occurs on the study area, but the study area is not within the elevation range of the species.
Deinandra paniculata	Paniculate tarplant	--/-- CNPS 4.2	Annual herb. Grows in sandy and vernally mesic soil in coastal scrub, valley and foothill grasslands and vernal pools. Flowering period: March/April to November. Elevation: 80 to 3,085 feet (25 to 940 meters).	**Present:** The species was observed at several locations along the project alignment during general biological surveys for the current project.
Dodecahema leptoceras	Slender-horned spineflower	FE/SE CNPS 1B.1	Annual herb. Occurs in sandy soils, within chaparral, cismontane woodland and coastal scrub alluvial fans) habitat. Flowering period: April to June Elevation:655 to 2,495 feet (200 to 760 meters).	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Dudleya multicaulis	Many-stemmed dudleya	--/-- CNPS 1B.2	Perennial herb. Occurs in clay soil, within chaparral, coastal scrub and valley and foothill grassland. Flowering period: April to June. Elevation: 50 to 2,590 feet (15 to 70 meters).	**Low Potential to Occur:** Habitat suitable for species survival does occur on the study area. Species was not observed during focused surveys.
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE CNPS 1B.1	Annual/perennial herb. Occurs in mesic soils, within coastal scrub, valley and foothill grassland and marsh and vernal pool habitats. Flowering period: April to June. Elevation: 65 to 2,035 feet (20 to 620 meters).	**Low Potential to Occur.** Mesic areas limited to a few small riparian habitats and a few basins (ephemeral pools). Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Erythranthe diffusa	Palomar monkeyflower	--/-- CNPS 4.3	Annual herb. Occurs in gravelly or sandy soils within chaparral and lower montane coniferous forests. Flowering period: April to June. Elevation: 4,005 to 6,005 feet (1220 to 1830 meters).	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area, the study area is not within the elevation range of the species.
Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	--/-- CNPS 3.1	Annual herb. Occurs in chaparral, disturbed areas, and mesic habitat. Flowering period: April to June. Elevation: 1,475 to 2,295 feet (450 to 700 meters).	**Not Likely to Occur:** Habitat suitable for species survival occurs on the study area, , but the study area is not within the elevation range of the species.
Harpagonella palmeri	Palmer's grapplinghook	--/-- CNPS 4.2	Annual herb. Occurs in clay and openings, within chaparral, coastal scrub and valley and foothill grassland. Flowering period: March to May. Elevation: 65 to 3,135 feet (20 to 955 meters).	**Moderate:** Clay soils are present in parts of the study area, chaparral, sage scrub, and native grassland are limited. The species has been recorded recently on or near the study area, but was not observed during surveys for the current project.

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Holocarpha virgata ssp. *elongata*	Graceful tarplant	--/-- CNPS 4.2	Annual herb. Occurs in chaparral, coastal scrub, valley and foothill grassland, and cismontane woodland. Flowering period: May to November. Elevation: 195 to 3610 feet (60 to 1,100 meters).	**Moderate Potential to Occur:** Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Hordeum intercedens	Vernal barley	--/-- CNPS 3.2	Annual herb. Occurs in coastal dunes, coastal scrub, valley and foothill grasslands, and vernal pools. Flowering period: March to June. Elevation: 15 to 3,280 feet (5 to 1,000 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Imperata brevifolia	California satintail	--/-- CNPS 2B.1	Perennial rhizomatous herb. Occurs in mesic habitats within chaparral, coastal scrub, meadows and seeps, Mojavean desert scrub, and riparian scrub. Flowering period: September to May. Elevation: 0 to 3,985 feet (0 to 1,215 meters).	**Not Likely to Occur:** area small amount of potential habitat does occur in, but the study area is not within the elevation range of the species.
Juglans californica	Southern California black walnut	--/-- CNPS 4.2	Perennial deciduous tree. Occurs in slopes, canyons, and alluvial habitats within chaparral, coastal scrub, cismontane woodlands, and riparian woodlands. Flowering period: March to August. Elevation: 165 to 2,955 feet (50 to 900 meters).	**Not Likely to Occur.** Suitable habitat is present on the study area but of low quality and/or small extent. Species is conspicuous and would have been observed if present. The species has not been recorded recently on or near the study area.
Juncus acutus ssp. leopoldii	Southwestern spiny rush	--/-- CNPS 4.2	Mesic areas within coastal dunes, coastal scrub, Marshes and swamps, and meadows and seeps.	**Low Potential to Occur:** A small amount of marsh habitat occurs within study area.

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Juncus luciensis	Santa Lucia dwarf rush	--/-- CNPS 1B.2	Annual herb. Found in vernal pools, ephemeral drainages, wet meadows, and along streams within meadows, lower montane coniferous forests, chaparral, and Great Basin scrub. Flowering period: April to June. Elevation: 985 to 6,695 feet (300 to 2,040 meters)	**Low Potential to Occur:** Several basins (ephemeral pools) occur in the study area, the study area is not within geographic range of the species.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	--/-- CNPS 1B.1	Annual herb. Grows in vernal pools, playas, and saline habitats within alkali sinks, coastal salt marshes, and wetland communities. Flowering period: April to May. Elevation: below 3,281 feet (1,000 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Lathyrus splendens	Pride-of-California	--/-- CNPS 4.2	Perennial herb. Occurs in sandy to gravelly soils in chaparral. Flowering period: March to June. Elevation: 655 to 5,005 feet (200 to 1,525 meters).	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area. Species was not observed during the focused surveys..
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	--/-- CNPS 4.3	Annual herb. Occurs along streambanks, floodplains, wet springs and meadows. Found in mesic habitat, within chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps and riparian scrub. Flowering period: September to May. Elevation: 0 to 3,985 feet (0 to 1,215 meters).	**Moderate:** Minimal suitable mesic habitat is present in the study area. The species has been recorded recently on or near the study area, but was not observed during surveys for the current project.

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Microseris douglasii ssp. *platycarpha*	Small-flowered microseris	--/-- CNPS 4.2	Annual herb. Found in clay soils within cismontane woodland, coastal scrub, valley and foothill grassland and vernal pools. Flowering period: March to May. Elevation: 50 to 3,510 feet (15 to 1,070 meters).	**Moderate Potential to Occur:** Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Myosurus minimus ssp. *apus*	Little mousetail	--/-- CNPS 3.1	Annual herb. Occurs in alkaline soils within vernal pools, valley and foothill grasslands. Flowering period: March to June. Elevation: 65 to 2,100 feet (20 to 640 meters).	**Low Potential to Occur:** Suitable habitat of basins (ephemeral pools) occurs in the study area but mostly on disturbed habitat. The species has been recorded recently on or near the study area, but was not observed during surveys for the current project.
Nama stenocarpa	Mud nama	--/-- CNPS 2B.2	Annual/perennial herb. Occurs in marshes and swamps within intermittent wet areas, such as lake margins and riverbanks. Flowering period: January-July. Elevation: 15 to 1,640 feet (5 to 500 meters).	**Low Potential to Occur:** Habitat suitable, in the form of marshes, for species survival does not occur on the study area. Species not observed during focused survey.
Navarretia fossalis	Spreading navarretia	FT/-- CNPS 1B.1	Annual herb. Occurs in chenopod scrub, shallow freshwater marshes and swamps, playas and vernal pools. Flowering period: April to June. Elevation: 100 to 2,150 feet (30 to 655 meters).	**Low Potential to Occur:** Several basins (ephemeral pools) occur in the study area. The species has been recorded recently on or near the study area but was not observed during surveys for the current project.

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Navarretia prostrata	Prostrate vernal pool navarretia	--/-- CNPS 1B.2	Annual herb. Occurs in mesic and alkaline floodplains, within coastal scrub, meadows and seeps, valley and foothill grasslands and vernal pools. Flowering period: April to June. Elevation: 10 to 3,970 feet (3 to 1,210 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. Basins (ephemeral pools) occur in the study area, and potential habitat occurs along some of the stream banks. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Orcuttia californica	California Orcutt grass	FE/SE CNPS 1B.1	Annual herb. Occurs in vernal pools. Flowering period: April to August. Elevation: 50 to 2,165 feet (15 to 660 meters).	**Low Potential to Occur:** Several basins (ephemeral pools) occur in the study area, but the species has not been observed recently in proximity to the study area.
Parkinsonia microphylla	Little-leaved palo verde	--/-- CNPS 4.3	Perennial deciduous shrub. Found in rocky or gravelly sites within Mojavean desert scrub. Flowering period: April to May. Elevation: 150 to 3,510 feet (45 to 1,070 meters).	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area
Penstemon californicus	California beardtongue	--/-- CNPS 1B.2	Perennial herb. Occurs on stony slopes and shrubby openings with sandy or granitic soils within chapparal, lower montane coniferous forest, and pinyon and juniper woodland. Flowering period: May to June. Elevation: 3,840 to 7,545 feet (1,170 to 2,300 meters).	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area, the study area is not within the elevation range of the species.

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Pseudognaphalium leucocephalum	White rabbit-tobacco	--/-- CNPS 2B.2	Perennial herb. Occurs on sandy or gravelly soils of benches, dry stream bottoms, and canyon bottoms within coastal scrub, chaparral, cismontane woodland, and riparian woodland. Flowering period: July to November. Elevation: below 6,890 feet (2,100 meters).	**Low Potential to Occur:** Habitat suitable for species survival limited to a few ephemeral streams on the study area. Not observed during focused surveys.
Quercus engelmannii	Engelmann oak	--/-- CNPS 4.2	Perennial deciduous tree. Occurs within cismontane woodland, chaparral, riparian woodland, and valley and foothill grassland. Flowering period: March to June. Elevation: 165 to 4,265 feet (50 to 1,300 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Rhinotropis cornuta var. fishiae	Fish's milkwort	--/-- CNPS 4.3	Chaparral, Cismontane woodland, Riparian woodland.	**Low Potential to Occur.** Riparian woodland habitat occurs in the study area. Species not observed during plant surveys.
Schoenoplectiella saximontana	Rocky Mountain bulrush	--/-- CNPS 2B.1	Marshes and swamps (margins), Vernal pools.	**Low Potential to Occur.** Marsh and swamp habitat occurs in the study area. Species not observed during plant surveys.
Scutellaria bolanderi ssp. *austromontana*	southern mountains skullcap	--/-- CNPS 1B.2	Perennial rhizomatous herb. Occurs in mesic, gravely soils, stream banks and oak or pine woodland habitats. Found within chaparral, cismontane woodland and lower montane coniferous forest. Flowering period: June to August. Elevation: 1,395 to 6,560 feet (42 to 2,000 meters).	**Not Likely to Occur:** Habitat suitable for species survival occurs in small amounts on the study area. The study area is at the low end of the elevation range of the species.
Sidalcea neomexicana	Salt spring checkerbloom	--/-- CNPS 2B.2	Perennial herb. Occurs in alkaline springs, marshes. Flowering period: March to June. Elevation: Below 4,921 feet (1,500 meters).	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area.

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Sphaerocarpos drewiae	Bottle liverwort	--/-- CNPS 1B.1	Ephemeral liverwort. Occurs on soil in openings in chaparral and coastal scrub. Elevation: 295 to 1,970 feet (90 to 600 meters)	**Low Potential to Occur:** Habitat suitable for species survival occurs on the study area, however this species in uncommon in Riverside County.
Symphyotrichum defoliatum	San Bernadino aster	--/-- CNPS 1B.2	Perennial rhizomatous herb. Occurs near ditches, streambanks and springs within cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and valley and foothill grassland. Flowering period: July to November. Elevation: 5 to 6,695 feet (2 to 2,040 meters).	**Low Potential to Occur:** Habitat suitable for species survival does occur on the study area, Species has a shrub like appearance and was not observed during the focused surveys.
Texosporium antijacobin	Woven-spored lichen	--/-- CNPS 3	Crustoce lichen (terricolous). Found on soil, small mammal pellets, dead twigs, and on Selaginella in in open sites within chaparral often with *Adenostoma fasciculatum*, *Eriogonum* sp., and *Selaginella* sp. Elevation: 195 to 2,165 feet (60 to 660 meters).	**Not Likely to Occur:** Chaparral does not occur in the study area. The species has not been recorded recently on or near the study area.
Tortula californica	California screw moss	--/-- CNPS 1B.2	Moss. Occurs on sandy soils within chenopod scrub and valley and foothill grassland. Elevation: 35 to 4,790 feet (10 to 1,460 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Trichocoronis wrightii var. *wrightii*	Wright's trichocoronis	--/-- CNPS 2B.1	Annual herb. Occurs in alkaline soil, moist places and dry riverbeds within meadows and seeps, marshes and swamps, riparian forest and vernal pools. Flowering period: May to September. Elevation: 15 to 1,425 feet (5 to 435 meters).	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.

[1] Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; R = Rare

[2] CNPS = California Native Plant Society 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 more common elsewhere; 2B–rare, threatened, or endangered in California, but more common elsewhere; 3–more information needed; 4–watch list for species of limited distribution. Extension codes: .1–seriously endangered; .2–moderately endangered; .3–not very endangered.

[3] County of San Diego Sensitive Plant Lists: A–rare, threatened, or endangered in California and elsewhere; B–rare, threatened, or endangered in California but more common elsewhere; C–may be quite rare but need more information; D–limited distribution and may be uncommon, but not presently endangered.

Not Likely to Occur–There are no present or historical records of the species occurring on or in the immediate vicinity, (within 3 miles) of the Project Site and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the Site.
Low Potential to Occur–There is a historical record of the species in the vicinity of the Project Site and potentially suitable habitat on Site, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The Site is above or below the recognized elevation limits for this species.
Moderate Potential to Occur–The diagnostic habitats associated with the species occur on or in the immediate vicinity of the Project Site, but there is not a recorded occurrence of the species within the immediate vicinity (within 3 miles). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.
High Potential to Occur–There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the Project Site (within 3 miles).
Species Present–The species was observed on the Project Site at the time of the survey or during a previous biological survey

Appendix E

Explanation of Status Codes for Plant and Animal Species

FEDERAL AND STATE CODES

U.S. Fish and Wildlife Service (USFWS)

BCC	Bird of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
FC	Federal candidate species
FE	Federally listed endangered
FPD	Federally proposed for delisting
FPE	Federally proposed endangered
FPT	Federally proposed threatened
FT	Federally listed threatened

USFWS Birds of Conservation Concern (BCC)

The primary legal authority for Birds of Conservation Concern (2008) is the Fish and Wildlife Conservation Act of 1980 (FWCA), as amended. Other authorities include the Endangered Species Act, Fish and Wildlife Act (1956) and 16 USC §701. A FWCA 1988 amendment (Public Law 100-653, Title VIII) requires the Secretary of the Interior through the USFWS to "identify species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973." The 2008 BCC report is the most recent effort by the USFWS to carry out this proactive conservation mandate.

The BCC report aims to identify accurately the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the USFWS' highest conservation priorities and draw attention to species in need of conservation action. The USFWS hopes that by focusing attention on these highest priority species, the report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. Birds of Conservation Concern 2008 lists are available online at https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php.

USFWS Federal Candidate (FC) Species

Federal candidate species are those for which the USFWS has on file "sufficient information on biological vulnerability and threats to support a proposal to list as endangered or threatened, but for which preparation and publication of a proposal is precluded by higher-priority listing actions. [The USFWS] maintain[s] this list for a variety of reasons: to notify the public that these species are facing threats to their survival; to provide advance knowledge of potential listings that could affect decisions of environmental planners and developers; to provide information that may stimulate conservation efforts that will remove or reduce threats to these species; to solicit input from interested parties to help us identify those candidate species that may not require protection under the [Endangered Species Act] or additional species that may require the Act's protections; and to solicit necessary information for setting priorities for preparing listing proposals" (Federal Register 70:90 [May 11, 2005]).

USFWS Federal Proposed Endangered (FPE) Species

Any species the Service has determined is in danger of extinction throughout all or a significant portion of its range and the Service has proposed a draft rule to list as endangered. Proposed endangered species are not protected by the take prohibitions of section 9 of the ESA until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

USFWS Federal Proposed Threatened (FPT) Species

Any species the Service has determined is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and the Service has proposed a draft rule to list as threatened. Proposed threatened species are not protected by the take prohibitions of section 9, consistent with any protective regulations finalized under section 4(d) of the ESA, until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

USFWS Bald and Golden Eagle Protection Act (BGEPA)

In 1782, Continental Congress adopted the bald eagle as a national symbol. During the next one and a half centuries, the bald eagle was heavily hunted by sportsmen, taxidermists, fisherman, and farmers. To prevent the species from becoming extinct, Congress passed the Bald Eagle Protection Act in 1940. The Act was extremely comprehensive, prohibiting the take, possession, sale, purchase, barter, or offer to sell, purchase, or barter, export or import of the bald eagle "at any time or in any manner."

In 1962, Congress amended the Eagle Act to cover golden eagles, a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. The golden eagle, however, is accorded somewhat lighter protection under the Act than the bald eagle. Another 1962 amendment authorizes the Secretary of the Interior to grant permits to Native Americans for traditional religious use of eagles and eagle parts and feathers.

California Department of Fish and Wildlife (CDFW)

SCE	State candidate for listing as endangered
SCT	State candidate for listing as threatened
SE	State listed endangered
SR	State listed rare
ST	State listed threatened
SSC	State species of special concern
WL	Watch List
FP	Fully Protected species refers to all vertebrate and invertebrate taxa of concern to the Natural Diversity Data Base regardless of legal or protection status. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW.
Special Animal	Refers to all vertebrate and invertebrate taxa of concern to the Natural Diversity Database regardless of legal or protection status.

Federal and State Forest Service Codes

Federal

FS U.S. Department of Agriculture Forest Service Sensitive

The USDA Forest Service defines sensitive species as those plant and animal species identified by a regional forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density, or significant current or predicted downward trends in habitat capability that would reduce a species existing distribution. Regional foresters shall identify sensitive species occurring within the region. More information is available at http://www.fs.fed.us/r5/projects/sensitive-species.

State

CDF California Department of Forestry and Fire Protection Sensitive

The Board of Forestry classifies as "sensitive species" those species that warrant special protection during timber operations. The list of "sensitive species" is given in §895.1 (Definitions) of the California Forest Practice Rules, which are available online at www.fire.ca.gov.

California Environmental Quality Act (CEQA)

For plants with no current federal or state legal standing, "CEQA" refers to the fact that under the Act, impacts to species may be found significant under certain circumstances (e.g., the species are regionally sensitive and/or are protected by a local policy, ordinance, or habitat conservation plan; or the impact involves interference with certain movements or migrations, with wildlife corridors or with nursery sites).

Bureau of Land Management (BLM) Sensitive

BLM Manual 6840 defines sensitive species as "species that require special management consideration to avoid potential future listing under the ESA and that have been identified in accordance with procedures set forth in this manual" (https://www.blm.gov/sites/blm.gov/files/uploads/mediacenter_blmpolicymanual6840.pdf). Species designated as Bureau sensitive must be native species found on BLM-administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management, and either: 1. There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range, or 2. The species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk. The Bureau Sensitive Species designation is not meant to include federally listed, proposed, candidate, or state listed species. It is BLM policy to provide sensitive species with the same level of protection given to federal candidate species.

OTHER CODES AND ABBREVIATIONS

California Native Plant Society California Rare Plant Rank (CRPR) Codes

Lists

1A = Presumed extirpated in California and either rare or extinct elsewhere. Eligible for state listing.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2A = Presumed extirpated in California but common elsewhere. Eligible for state listing.

2B = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Review List: Plants about which more information is needed. Some eligible for state listing.

4 = Watch List: Plants of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

List/Threat Code Extensions

.1 = Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

A "CA Endemic" entry corresponds to those taxa that only occur in California.

All List 1A (presumed extinct in California) and some List 3 (need more information; a review list) plants lacking threat information receive no extension. Threat Code guidelines represent only a starting point in threat level assessment. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Code.

County of Riverside

Multiple Species Habitat Conservation Plan (MSHCP) Covered

MSHCP Covered Species indicates that the species is part of a proposed list of species (146 total) considered at this time to be adequately conserved by the Western Riverside County MSHCP, provided that participants meet all conditions listed in the Final MSHCP. These species are discussed in Section 2.1.4 and 9.2 of the MSHCP, Volume 1.

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Group Designation

Group 1 – Take coverage is warranted based upon regional or landscape level considerations, such as healthy population levels, widespread distribution throughout the MSHCP Plan Area, and life history characteristics that respond to habitat-scale conservation and management actions.

Group 2 – Take coverage is warranted based upon regional or landscape level considerations with the addition of site-specific conservation and management requirements that area clearly identified in the MSHCP for species that are generally well distributed but that have core habitats that require conservation.

Group 3 – Take coverage is warranted based upon site-specific considerations and the identification of specific conservation and management conditions for species within a narrowly defined habitat or limited geographic area within the MSHCP Plan Area.

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Special Species Acronyms/Abbreviations

NEPSSA	Narrow Endemic Plant Species Survey Area species – Designated Area where focused surveys are required for plant species that are highly restricted by their habitat affinities, edaphic requirements, or other ecological factors, and for which specific conservation measures have been identified in Section 6.1.3 of the MSHCP, Volume I.
CASSA	Criteria Area Species Survey Area – Designated areas where focused surveys for specific species are required. These are species for which existing available information is not sufficient, and for which specific conservation measures have been identified in Section 6.3.2 of the MSHCP, Volume I.
Planning Species	Subsets of Covered Species that are intended to provide guidance for MSHCP Reserve assembly in Cores, Linkages, and Area Plans.

Appendix F

Special-Status Animal Species Observed or with Potential to Occur

Species	Status[1]	Habitat Associations	Potential to Occur[2]
INVERTEBRATES			
Insects			
Crotch bumble bee (*Bombus crotchii*)	--/SCE	Open grassland and scrub habitat. Requires a hotter and drier environment than other *Bombus* species and can tolerate only a narrow range of climatic conditions. Nests underground, often in abandoned rodent dens. Food plants include *Asclepias*, *Chaenactis*, *Lotus*, *Phacelia*, and *Salvias*.	**Moderate Potential to Occur:** Suitable habitat is present on the study area; the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Quino checkerspot butterfly (*Euphydryas editha quino*)	FE/--	Occurs in California from western Riverside County southwards to southern San Diego County. Inhabits open and sparsely vegetated areas that contain larval host plant species (principally dot-seed plantain [*Plantago erecta*], woolly plantain [*Plantago patagonia*] but also Coulter's snapdragon [*Antirrhinum coulterianum*], Chinese houses [*Collinsia* sp.], and rigid bird's beak [*Cordylanthus rigidus*]) and nectar sources. Often found on rounded hilltops, ridgelines, and occasionally rocky outcrops. Occurs within a wide range of open-canopied habitats including vernal pools, sage scrub, chaparral, grassland, and open oak and juniper woodland communities.	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
White cuckoo bee (*Neolarra alba*)	--/--	Very little known about this species. Range reported as southern California west of the mountains; host plants include *Cryptantha intermedia* and *Lotus*. Spp.	**Low Potential to Occur**: Suitable habitat is present in the project site but no sign of the species was observed during surveys, however the species cannot be excluded with certainty.
Crustaceans			
Vernal pool fairy shrimp (*Branchinecta sandiegoensis*)	FT/--	Restricted to small, shallow vernal pools and are occasionally found in ditches and road ruts that support suitable conditions. This species is endemic to southern California, specifically coastal southern California and northwestern Baja California, Mexico	**Moderate Potential to Occur.** Suitable habitat comprised of basins (ephemeral pools) occur at several locations throughout the study area.
Santa Rosa Plateau fairy shrimp (*Linderiella santarosae)*	--/--	Santa Rosa Plateau fairy shrimp is endemic to western Riverside County and is restricted to seasonal southern basalt flow vernal pools with cool, clear-to-milky waters that remain filled for extended periods of time. It is only known to occur on the Santa Rosa Plateau.	**Not Likely to Occur**: Although several basins (ephemeral pools) occur in the study area the species is generally restricted to the Santa Rosa Plateau and the project study area is not on or adjacent to the Santa Rosa Plateau. .

Species	Status[1]	Habitat Associations	Potential to Occur[2]
San Diego fairy shrimp (*Branchinecta sandiegoensis*)	FE/--	Endemic to San Diego and Orange County mesas. Occurs in seasonally astatic pools which occur in tectonic swales or earth slump basins and other areas of shallow, standing water often in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral.	**Low Potential to Occur:** Although several basins (ephemeral pools) occur in the study area, the study area is not within geographic range of the species, and the study area is not within the elevation range of the species.
Riverside fairy shrimp (*Streptocephalus woottoni*)	FE/--	In California, occurs from Los Angeles County south to coastal San Diego County, and east to western Riverside County. Found in deep seasonal vernal pools, ephemeral ponds, stock ponds, and other human modified depressions at least 30 centimeters deep. Associated with grasslands, which may be interspersed through chaparral or coastal sage scrub vegetation.	**Moderate Potential to Occur.** Vernal pools and ephemeral basins do not occur in study area.
VERTEBRATES			
Amphibians			
Western spadefoot toad (*Spea hammondii*)	--/SSC	Occurs from northern California southward to San Diego County, and west of the Sierra Nevada at elevations below 4,500 feet. This terrestrial species requires temporary pools for breeding. Suitable upland habitats include coastal sage scrub, chaparral, and grasslands. Most common in grasslands with vernal pools or mixed grassland-coastal sage scrub areas. Breeds in temporary pools formed by heavy rains, but also found in riparian habitats with suitable water resources. Breeding pools must lack exotic predators such fish, bullfrogs, and crayfish for the species to successfully reproduce. Estivates in burrows within upland habitats adjacent to potential breeding sites.	**Moderate Potential to Occur**: Suitable habitat occurs as basins (ephemeral pools). Additional potential habitat consisting of streams and riparian habitats also occurs, but these habitats are not the primary preferred habitat for the species.
Coast Range newt (*Taricha torosa*)	--/SSC	Occurs along the coast and coast range mountains from Mendocino County south to San Diego County. Found in wet forests, oak forests, chaparral, and rolling grasslands. In southern California, drier chaparral, oak woodland, and grasslands. Adults migrate from locations on land to ponds, reservoirs, and sluggish pools in streams to breed, typically beginning anywhere from late December to February, depending on rainfall amounts.	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area, the study area is not within geographic range of the species, and the study area is not within the elevation range of the species.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Reptiles			
Southern California legless lizard (*Anniella stebbinsi*)	--/SSC	Occurs in sparsely vegetated areas with moist warm, loose soil with plant cover; moisture is essential. Common in several habitats but especially in beach dunes, coastal scrub, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Found primarily in areas with sandy or loose organic soils or where there is plenty of leaf litter. Sometimes found in suburban gardens in southern California.	**Moderate Potential to Occur:** Suitable habitat is present on the study area; the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
California glossy snake (*Arizona elegans occidentalis*)	--/SSC	Occurs along the coastal regions from San Francisco south to San Diego County; though it is absent along the central coast of California. Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas and areas with soils loose enough for easy burrowing.	**Moderate Potential to Occur:** Suitable habitat is present on the study area; the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Orange-throated whiptail (*Aspidoscelis hyperythra*)	--/WL	Found within the southwestern portion of California in southern San Bernardino, western Riverside, Orange, and San Diego Counties on the western slopes of the Peninsular ranges below 3,500 feet. Suitable habitat includes coastal sage scrub, chaparral, juniper woodland, oak woodland, and grasslands along with alluvial fan scrub and riparian areas. Occurrence of the species correlated with the presence perennial plants (such as California buckwheat, California sagebrush, black sage, or chaparral) to provide a food base for its major food source, termites.	**Present:** The species was observed during biological surveys for the project. It was observed on a boulder within open sage scrub in southern portion of the site. The reach of the site between the intersection of Gaale Avenue and Auld Road north to Benton Road is presumed occupied by this species.
Coastal whiptail (Aspidoscelis tigris stejnegeri)	--/SSC	Occurs along coastal southern California from Santa Barbara to San Diego Counties and south into Baja California from sea level to 7,000 feet (2,130 meters). Found in a variety of semiarid habitats with open, sparsely vegetated areas, including sage scrub, chaparral, grassland, riparian, and woodland habitats.	**High Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.
San Diego banded gecko (*Coleonyx variegatus abbotti*)	--/SSC	Occurs in the coastal regions of southern California from interior Ventura County to San Diego County, although the species is absent from the extreme outer coast. Inhabits coastal sage scrub and chaparral habitats, most often occurring in granite or rocky outcrops.	**Moderate Potential to Occur:** Suitable habitat is present on the study area; the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Red-diamond rattlesnake (*Crotalus ruber*)	--/SSC	Occurs in the southwestern portion of California from San Bernardino County southward to San Diego County at elevations below 5,000 feet. Has a wide tolerance for varying environments including the desert, dense foothill chaparral, warm inland mesas and valleys, and cool coastal zones. Most commonly found near heavy brush with large rocky microhabitats. Chamise and red shank chaparral associations may offer better structural habitat for refuges and food resources.	**High Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.
San Bernardino ringneck snake (*Diadophis punctatus modestus*)	--/--	Occurs along the southern California coast from the Santa Barbara area south along the coast to San Diego County, and inland into the San Bernardino mountains. Prefers moist habitats, including wet meadows, rocky hillsides, gardens, farmland, grassland, chaparral, mixed coniferous forests, woodlands.	**High Potential to Occur**: Suitable habitat occurs in the study area and the species has been recorded recently on or near the study area, but was not observed during project surveys.
Western pond turtle (Emys marmorata)	--/SSC	Occurs north of California into Oregon, Washington and British Columbia (west of the crest of the Cascades and Sierras). Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater.	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Coast horned lizard (*Phrynosoma blainvillii*)	--/SSC	Occurs from southern California to northern Baja California. In California, the species predominately occurs from Kern County south to San Diego County west of the desert at elevations below 8,000 feet. Inhabits a wide variety of vegetation types including sagebrush scrub, chaparral, grasslands, forests, and woodlands but is restricted to areas with suitable sandy, loose soils with open areas for basking. Diet primarily composed of native harvester ants (*Pogonmyrmex* sp.) and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	**High Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys
Coast patch-nosed snake (*Salvadora hexalepis virgultea*)	--/SSC	Occurs in the coastal regions of California from the northern Carrizo Plains in San Luis Obispo County south to San Diego County at elevations below 7,000 feet. Inhabits semi-arid shrubby areas such as chaparral and desert scrub. Also found along washes, sandy flats, canyons, and rocky areas. Takes refuge and overwinters in burrows and woodrat nests.	**Moderate Potential to Occur:** Suitable habitat is present on the study area; the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Two-striped gartersnake (*Thamnophis hammondii*)	--/SSC	Found in California from Monterey County south along the coast to San Diego County at elevations below 7,000 feet. Commonly inhabits perennial and intermittent streams with rocky beds bordered by riparian habitats dominated by willows and other dense vegetation. Has also been found in stock ponds, and other artificially created aquatic habitats, if bordered by dense vegetation and potential prey, such as amphibians and fish, are present.	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Fish			
Arroyo chub (*Gila orcuttii*)	--/SSC	Found in streams and rivers of southern California including the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita Rivers, and Malibu and San Juan Creeks. Historic range has been expanded through the introduction to streams along the coast as far north as Chorro Creek in San Luis Obispo County. Additional introductions have occurred within the Santa Ynez, Ventura, Santa Maria, Cuyama, Santa Clara, and Mojave River systems. Habitats include slow-moving or backwater environments with mud or sand substrates, though can also occur in pools habitats with gravel, cobble, or boulder substrates.	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area, the study area is not within geographic range of the species, and the study area is not within the elevation range of the species.
Birds			
Cooper's Hawk (*Accipiter cooperi*)	--/WL	In California, breeds from Siskiyou County south to San Diego County and eastwards to Owens Valley at elevations below 9,000 feet. Inhabits forests, riparian areas, and more recently suburban and urban areas. Nests within dense woodlands and forests and isolated trees in open areas.	**Moderate Potential to Occur**: Suitable habitat occurs at two location along the study area. The species has been recorded recently on or near the study area but was not observed during project surveys.
Tricolored blackbird (*Agelaius tricolor*)	BCC/ST	Highly colonial, nomadic species occurring as a year-round resident of California from Sonoma County to San Diego. Common locally in the Central Valley and sporadically throughout the State. Breeds in dense colonies. Breeding habitat typically characterized by emergent freshwater marsh dominated by tall, dense cattails (*Typha* spp.) and bulrush (*Schoenoplectus* spp.), though the species also utilizes willows (*Salix* spp.), blackberries (*Rubus* spp.), thistles (*Cirsium* and *Centaurea* spp.), nettles (*Urtica* sp.), and agricultural crops. Forages in grasslands and cropland habitats adjacent to breeding areas.	**Low Potential to Occur**: Minimal suitable habitat occurs in the study area; and only at a single location. The species has been recorded recently on or near the study area but was not observed during project surveys.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	--/WL	Year-round resident of southwestern California occurring from Santa Barbara County south to San Diego County at elevations below 5,000 feet. Generally found on moderate to steep slopes vegetated with grassland, coastal sage scrub, and chaparral. Prefer areas with California sagebrush (Artemisia californica). Generally absent from areas with dense stands of coastal sage scrub or chaparral. May occur on steep grassy slopes without shrubs if rock outcrops are present.	**Moderate Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.
Golden eagle (*Aquila chrysaetos*)	BCC/WL, FP	Uncommon permanent resident and migrant throughout California, except the center of the Central Valley. More common in southern California than in northern regions. Inhabits a variety of habitats, nesting in cliffs or trees and rugged terrain and foraging over plains, grasslands, or low and open shrublands including chaparral and coastal sage scrub. Typically absent from heavily forested areas or on the immediate coast and are almost never detected in urbanized environments.	**Low Potential to Occur**: Suitable habitat occurs in the study area but is surrounded by development. Species typically avoids populated areas the species has been recorded recently on or near the study area but was not observed during project surveys.
Bell's sage sparrow (Artemisiospiza belli belli)	BCC/WL	Non-migratory resident on the coastal ranges of California and western slopes of the central Sierra Nevada mountains. Occurs year-round in southern California. Breeds in dry coastal sage scrub and chaparral, desert scrub, and similar other open, scrubby habitats. In foothill chaparral, they tend toward younger, less dense stands that are recovering from recent fires; less common in older, taller stands that have remained unburned.	**High Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.
Burrowing Owl (*Athene cunicularia*)	BCC/SSC	Found from central California east to the Mojave Desert and south to coastal San Diego County. Primarily a grassland species that prefers areas with level to gentle topography and well-drained soils. Species can also occupy agricultural areas, vacant lots, and pastures. Requires underground burrows for nesting and roosting that are typically dug by other species such as California ground squirrel (*Spermophilus beecheyi*). Also utilizes natural rock cavities, debris piles, culverts, and pipes for nesting and roosting.	**High Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.
Ferruginous hawk (*Buteo regalis*)	BCC/WL	Found only as wintering individual in California. Typically occupies flat and rolling terrain in grasslands, shrub habitats, and deserts.	**Moderate Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Swainson's hawk (Buteo swainsoni)	BCC/ST	Summer resident in California's Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well.	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*)	BCC/SSC	One of seven subspecies occurring in southern California from southern Orange County south to San Diego County. Occupies native scrub vegetation with thickets of mature cacti consisting of cholla (Cylindropuntia spp.) or prickly-pear cactus (Opuntia littoralis). Cacti must be tall enough to support and protect the bird's nest (typically 3 feet or more in height). Surrounding vegetation usually consists of coastal sage scrub habitat with shrubs normally below the level of nest placement.	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area, the study area is not within geographic range of the species, and the study area is not within the elevation range of the species.
Northern harrier (*Circus hudsonius*)	--/SSC	Occurs as a year-round resident in California. Inhabits open areas including wetlands, marshes, marshy meadows, grasslands, riparian woodlands, desert scrub, and pastures and agricultural areas. Breeding populations in southern California from Ventura County to San Diego County are highly fragmented with many local populations extirpated mostly likely as a result of habitat loss and degradation. Nests on the ground in wetlands and uplands within patches of dense, often tall, vegetation in undisturbed areas.	**Moderate Potential to Occur:** Suitable habitat is present on the study area; the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT, BCC/SE	Uncommon summer resident of California. Current breeding distribution is restricted to isolated sites in Sacramento, Amargosa, Kern, Santa Ana, and Colorado River valleys. Riparian obligates that nest in riparian woodlands with native broadleaf trees and shrubs, such as cottonwoods and willows, at least 50 acres or more in size within the arid to semiarid landscapes. Most likely to be found in patches of riparian habitat greater than 200 acres.	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area, the study area is not within geographic range of the species, and the study area is not within the elevation range of the species.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
White-tailed kite *(Elanus leucurus*)	--/FP	Year-long resident of California residing along the coasts and valleys west of the Sierra Nevada foothills and southeast deserts, though the species has also been documented breeding in arid regions east of the Sierra Nevada and within Imperial County. Inhabits low elevation grasslands, wetlands, oak woodlands, open woodlands, and is associated with agricultural areas. Breeds in riparian areas adjacent to open spaces nesting isolate trees or relatively large stands.	**Moderate Potential to Occur:** Suitable habitat for foraging is present on the study area along with a small amount of potential roosting habitat. the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Southwestern willow flycatcher (*Empidonax traillii extimus*)	FE/SE	Breeds in southern California, Arizona, New Mexico, southwestern Colorado, and extreme southern portions of Nevada and Utah. Riparian obligates that breed in relatively dense riparian habitats along rivers, streams, or other wetlands where surface water is present, or soils are very saturated. Breeding habitat can consist of monotypic stands of willows (*Salix* ssp.), a mixture of native broadleaf trees and shrubs, monotypic stands of exotics such as tamarisk (*Tamarix* spp.) or Russian olive (*Elaeagnus angustifolia*), or mixture of native broadleaf trees and shrubs with exotics. Restricted in San Diego County to two modest colonies at San Luis Rey River and Santa Margarita River, with a few scattered pairs.	**Not Likely to Occur:** Species typically requires dense layered riparian habitat that is not present in study. Riparian habitat within study area is sparse or occurs in small patches not typically for species. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project.
California horned lark (*Eremophila alpestris actia*)	--/WL	In California, occurs along the coastal ranges of from San Joaquin Valley south to U.S./Mexico border. Inhabits a wide variety of open habitats with low, sparse vegetation where trees and large shrubs are generally absent. Suitable habitats include grasslands along the coast, deserts within the inland regions, shrub habitat at higher elevations, and agricultural areas.	**Present**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area and was observed using open fields adjacent to the alignment.
Bald eagle (*Haliaeetus leucocephalus*)	FD, BCC/SE, FP	Occurs from Alaska and Canada, across the contiguous United States and down to northern Mexico. Found near lakes, reservoirs, rivers, marshes, and coasts. They can also be spotted near fish processing plants and dumpsters during feeding. Fish, birds, reptiles, amphibians, invertebrates, and small mammals make up their diet. This species of bird will build large nests (typically 5-6 feet in diameter) in trees, cliff faces, or ground sites. They prefer sturdy conifers that protrude above forest canopy. In southern parts of their range, they can be spotted nesting in deciduous trees, mangroves, and cactus.	**Not Likely to Occur:** Habitat suitable for species survival does not occur on the study area. Lakes ponds and similar suitable habitat occur to the east at Lake Skinner and Diamond Valley Lake, but not within 3,000 feet of the project alignment. .

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Loggerhead shrike (*Lanius ludovicianus*)	BCC/SSC	In California, found year-round throughout the foothills and lowlands with winter migrants found coastally north of Mendocino County. Inhabits a variety of habitats seen foraging over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs. Individuals forage by perching to search for prey (such as large insects, small mammals, amphibians, reptiles, and fish) and using impaling as a means of handling prey.	**High Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.
White-faced ibis (*Plegadis chihi*)	--/WL	Uncommon summer resident in sections of southern California and a rare visitor in the Central Valley. Local wintering visitor along coast. Prefers to feed in fresh emergent wetlands, shallow lacustrine waters, muddy ground of wet meadows, and irrigated or flooded pastures and croplands. Nests in dense, fresh emergent wetland.	**Low Potential to Occur:** Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Coastal California gnatcatcher (*Polioptila californica californica*)	FT/SSC	Year-round resident of California occurring from Ventura County south to San Diego County, and east to the western portions of San Bernardino and Riverside Counties. Typically occurs in arid, open sage scrub habitats on gently slopes hillsides to relatively flat areas at elevations below 3,000 feet. Composition of sage scrub in which gnatcatchers are found varies though California sagebrush present as dominant or co-dominant species. Mostly absent from areas dominated by black sage (*Salvia mellifera*), white sage (*Salvia apiana*), or lemonade berry (*Rhus integrifolia*), though may occur more regularly in inland regions dominated by black sage.	**High Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.
Yellow warbler (*Setophaga petechia*)	BCC/SSC	Common to locally abundant species breeding throughout California at elevations below 8,500 feet; excluding most of the Mojave Desert and all of the Colorado Desert. Breeds in riparian areas dominated by willows and cottonwoods, near rivers, streams, lakes, and wet meadows. Also breeds in montane shrub and conifer forests in higher elevation areas.	**Moderate Potential to Occur**: Suitable habitat occurs at two locations in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.
Bendire's thrasher (*Toxostoma bendirei*)	BCC/SSC	Migratory; local spring/summer resident in flat areas of desert succulent shrub/Joshua tree habitats in Mojave desert. Nests in cholla, yucca, paloverde, thorny shrub, or small tree, usually 0.5 to 20 feet above ground.	**Not Likely to Occur:** Suitable habitat is not present on the study area. The species has not been recorded recently on or near the study area.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Least Bell's Vireo (*Vireo bellii pusillus*)	FE/SE	In California, breeds along the coast and western edge of the Mojave Desert from Santa Barbara County south to San Diego County, and east to Inyo, San Bernardino, and Riverside Counties. Breeding habitat consists of early to mid-successional riparian habitat, often where flowing water is present, but also found in dry watercourses within the desert. A structurally diverse canopy and dense shrub cover is required for nesting and foraging. Dominant species within breeding habitat includes cottonwood and willows with mule fat, oaks, and sycamore, and mesquite (*Prosopis glandulosa*) and arrowweed (*Pluchea sericea*) within desert habitats. The species can be tolerant of the presence of non-native species such as tamarisk.	**Present** Suitable habitat occurs at two location in the study area; the species has been recorded recently on or near the study area and was heard calling from the riparian habitat between Benton Road and Thompson Road.
Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)	--/SSC	Uncommon summer resident in sections of southern California and a rare visitor in the Central Valley. Local wintering visitor along coast. Prefers to feed in fresh emergent wetlands, shallow lacustrine waters, muddy ground of wet meadows, and irrigated or flooded pastures and croplands. Breeds colonially in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Requires abundant large insects such as dragonflies; nesting is timed for maximum emergence of insect prey.	**Low Potential to Occur:** Suitable habitat is present on the study area but is limited and of low quality for species; the species was recorded recently near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Mammals			
Pallid bat (*Antrozous pallidus*)	--/SSC	Locally common species found at low elevations in California. Associated with arid and open habitats including grasslands, shrublands, woodlands, and forests, often with open water nearby. Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Day roosts in bridges, caves, crevices, mines, and occasionally hollow trees and buildings. Appears to be intolerant of most human disturbances, being mostly absent from urban and suburban areas.	**Low Potential to Occur**: Suitable habitat is present in the project site but no sign of the species was observed during surveys, however the species cannot be excluded with certainty
Townsend's big-eared bat (*Corynorhinus townsendii*)	--/SSC	Occurs throughout California but distribution is strongly correlated with the availability of caves and cave-like roosting habitat. Found in a variety of habitats with presence of caves or cave-like structures (such as buildings). In San Diego County, presumed absent from coastal areas being found more commonly in historic mining districts and boulder-strewn regions (i.e., Escondido, Lakeside, Dulzura, Jacumba, etc.).	**Low Potential to Occur**: Suitable habitat is present in the project site but no sign of the species was observed during surveys, however the species cannot be excluded with certainty

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Western mastiff bat (Eu*mops perotis californicus*)	FE/SE	In California, occurs from Monterey County to San Diego County from the coast eastward to the Colorado Desert. Found in open, semi-arid to arid habitats including coastal and desert scrub, grasslands, woodlands, and palm oases. Prefers to roost in high situations above the ground on vertical cliffs, rock quarries, outcrops of fractured boulders, and occasionally tall buildings.	**Low Potential to Occur**: Suitable foraging habitat is present in the project site but roosting habitat is not present and no sign of the species was observed during surveys, however the species cannot be excluded with certainty
Western yellow bat (*Lasiurus xanthinus*)	--/SSC	Occurs from southern California from in Los Angeles, San Bernardino, and San Diego Counties. In San Diego, commonly found in Anza-Borrego Desert but is also established west of the desert within rural to suburban areas including Escondido, Vista, Ramona, Lakeside, El Cajon, and La Mesa. Roosts primarily on dead palm frond skirts of native and non-native fan palms but has also been observed in cottonwoods and yuccas. Occurs within a variety of habitats where palms are present including desert riparian, desert washes, palm oasis, cottonwood-willow riparian forest, and developed areas.	**Moderate Potential to Occur:** Suitable habitat is present on the study area; the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty.
Dulzura pocket mouse (*Chaetodipus californicus femoralis*)	--/SSC	Occurs in the foothills and mountains of San Diego County, although species can be found on the upper portions of mountain slopes extending into the desert regions. Ranges from the coastal regions (Oceanside to Del Mar, and possibly south to the Tijuana River Valley), eastwards to the Palomar and Cuyamaca Mountains, and extends to the desert slopes of San Felipe Valley, Cigarette Hills, and McCain Valley. Prefers gravelly substrates with sun exposure and can be found within open to dense vegetation. Inhabits chaparral habitats, but is occurs within coastal sage scrub, oak woodland, and at the edge of grasslands.	**High Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.
Northwestern San Diego pocket mouse (*Chaetodipus californicus femoralis*)	--/SSC	Occurs throughout southwestern California from western Riverside County to northern Baja California at elevations below 6,000 feet. Inhabits coastal sage scrub, grasslands, and chaparral communities, and generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates. Forage for seeds from California sagebrush, California buckwheat, lemonade berry, and grasses under shrub and tree canopies, or around rock crevices.	**Moderate Potential to Occur**: Suitable habitat occurs in the study area but is of limited size; the species has been recorded recently on or near the study area but was not observed during project surveys.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
San Bernardino kangaroo rat (*Dipodomys merriami parvus*)	FE/SE	Occurs in southern California within the San Jacinto Valley, western Riverside County, and southwestern San Bernardino County, and northwestern San Diego County at elevations between 4,100 feet. Inhabits native to open grasslands and sparse coastal sage scrub (less than 30 percent cover) on relatively flat or gently sloping ground. Dominant species include native and non-native herbaceous species such as filaree (*Erodium* sp.), non-native grasses (*Bromus* ssp.), California sagebrush, and California buckwheat.	**Low Potential to Occur**: Suitable habitat occurs in portions of the study area; the species has been recorded recently on or near the study area but was not observed during project surveys. Project is at southern limits of species known range and primarily occurs within existing roadways where the project does occur within species range.
Stephen's kangaroo rat (Dipodomys stephensi)	FE/ST	Occurs only in Riverside and San Diego Counties in primarily annual and perennial grasslands, but also occurs in coastal scrub and sagebrush with sparse canopy cover. Prefers buckwheat, chamise, brome grass and filaree. Will burrow into firm soil.	**Moderate Potential to Occur**: Suitable habitat occurs in portions of the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.
San Diego desert woodrat (*Neotoma lepida intermedia*)	--/SSC	Occurs in coastal southern California from San Diego County to San Luis Obispo County. Prefer moderate to dense canopies in chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca.	**High Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.
Southern grasshopper mouse (*Onychomys torridus ramona*)	--/SSC	Found in desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.	**High Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.
Jacumba pocket mouse *(Perognathus longimembris internationalis*)	--/SSC	Occurs in desert riparian, desert scrub, desert wash, coastal scrub and sagebrush habitats. Rarely found on rocky sites.	**Moderate Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
San Diego black-tailed jackrabbit (*Lepus californicus* bennettii)	--/SSC	Occurs along the coastal regions of southern California. Found in arid regions preferring grasslands, agricultural fields, and sparse scrub. Typically absent from areas with high-grass or dense brush, such as closed-canopy chaparral, primarily occupying short-grass and open scrub habitats.	**High Potential to Occur**: Suitable habitat occurs in the study area; species is locally common and the species has been recorded recently on or near the study area but was not observed during project surveys.
American badger (*Taxidea taxus*)	--/SSC	Uncommon, permanent resident found through California, except for the extreme north coast areas. Associated with large blocks of undeveloped land composed of open valleys, alluvial fans, meadows, grasslands, and sandy desert. Dens function as sites for resting and parturition. Friable, easily crumbled soils are important for denning.	**Moderate Potential to Occur**: Suitable habitat occurs in the study area; the species has been recorded recently on or near the study area but was not observed during project surveys.

[1] Listing codes are as follows: FE = Federally Endangered; FT = Federally Threatened; FC= Federal Candidate species; BCC = Birds of Conservation Concern; SE = State of California Endangered; FP = State of California Fully Protected; WL = State of California Wait-Listed; SSC = State of California Species of Special Concern.

[2] County of San Diego Sensitive Animal List: Group 1 = Animals that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met; Group 2 = Animals that are becoming less common, but are not yet so rare that extirpation or extinction is imminent without immediate action; these species tend to be prolific within their suitable habitat types.

Not Likely to Occur - There are no present or historical records of the species occurring on or in the immediate vicinity, (within 3 miles) of the Project Site and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the Site.

Low Potential to Occur - There is a historical record of the species in the vicinity of the Project Site and potentially suitable habitat on Site, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The Site is above or below the recognized elevation limits for this species.

Moderate Potential to Occur - The diagnostic habitats associated with the species occur on or in the immediate vicinity of the Project Site, but there is not a recorded occurrence of the species within the immediate vicinity (within 3 miles). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.

High Potential to Occur - There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the Project Site (within 3 miles).

Species Present - The species was observed on the Project Site at the time of the survey or during a previous biological survey

Appendix G

Federal Jurisdictional Information

WETLANDS AND "WATERS OF THE U.S."

WETLANDS

The U.S. Army Corps of Engineers (USACE; 33 CFR 328.3) and the Environmental Protection Agency (EPA; 40 CFR 230.3) jointly define wetlands as "[t]hose areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory 1987).

WATERS OF THE U.S.

The official definition of "Waters of the U.S." and their limits of jurisdiction (as they may apply) are defined by the USACE' Regulatory Program Regulations (33 CFR 328.3, paragraphs [a] 1-3 and [e], and Section 328.4, paragraphs [c] 1 and 2) as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which 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 including any such waters,

    i. which are or could be used by interstate or foreign travelers for recreation or other purposes; or

    ii. from which fish or shellfish are or could be taken and sold in interstate commerce; or

    iii. which are used or could be used for industrial purpose by industries in interstate commerce;

4. All impoundments of waters otherwise defined as waters of the United States under the definition;

5. Tributaries of waters;

6. The territorial seas;

7. Wetlands adjacent to waters (other than waters that are themselves wetlands).

NON-TIDAL WATERS OF THE U.S.

The limits of jurisdiction in non-tidal waters: In the absence of adjacent wetlands, the jurisdiction extends to the OHWM, or when adjacent wetlands are present, the jurisdiction extends to the limit of the adjacent wetlands.

The term OHWM refers to that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation (scouring), the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Waters of the U.S. must exhibit an OHWM or other evidence of surface flow created by hydrologic physical changes. These physical changes include (Riley 2005):

- Natural line impressed on the bank
- Shelving
- Changes in the character of soil
- Destruction of terrestrial vegetation
- Presence of litter and debris
- Wracking
- Vegetation matted down, bent, or absent
- Change in plant community
- Sediment sorting
- Leaf litter disturbed or washed away
- Scour
- Deposition
- Multiple observed flow events
- Bed and banks
- Water staining

Further guidance on identifying the OHWM in the Arid Southwest (Lichvar and McColley 2008). This publication provided geomorphic and vegetation OHWM indicators specific to the Arid Southwest.

Jurisdictional areas also must be connected to Waters of the U.S. (Guzy and Anderson 2001; U.S. Supreme Court 2001).

As a consequence of the U.S. Supreme Court decision in Rapanos v. United States, a memorandum was developed regarding Clean Water Act jurisdiction (Grumbles and Woodley 2007). The memorandum states that the EPA and the USACE will assert jurisdiction over traditional navigable waters (TNW), wetlands adjacent to TNW, tributaries to TNWs that are a relatively permanent water body (RPW), and wetlands adjacent to TNW. An RPW has year-round flow or a continuous seasonal flow (i.e., typically for three months or longer). Jurisdiction over other waters (i.e., non TNW and RPW) will be based on a fact-specific analysis to determine if they have a significant nexus to a TNW.

Pursuant to the USACE Instructional Guidebook (USACE and EPA 2007), the significant nexus evaluation will cover the subject reach of the stream (upstream and downstream) as well as its

adjacent wetlands (Illustrations 2 through 6, USACE and EPA 2007). The evaluation will include the flow characteristics, annual precipitation, ability to provide habitat for aquatic species, ability to retain floodwaters and filter pollutants, and proximity of the subject reach to a TNW, drainage area, and the watershed.

WETLAND CRITERIA

Wetland boundaries are determined using three mandatory criteria (hydrophytic vegetation, wetland hydrology, and hydric soil) established for wetland delineations and described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). Following is a brief discussion of the three criteria and how they are evaluated.

Vegetation

"Hydrophytic vegetation is defined herein as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present" (Environmental Laboratory 1987).

The wetland indicator status (obligate upland, facultative upland, facultative, facultative wetland, obligate wetland, or no indicator status) of the dominant plant species of all vegetative layers is determined. Species considered to be hydrophytic include the classifications of facultative, facultative wetland, and obligate wetland as defined in the current list of wetland plants of the Arid Southwest (Lichvar, et al. 2016; Table A-1). The percent of dominant wetland plant species is calculated. The hydrophytic vegetation criterion is considered to be met if it meets the "Dominance Test," "Prevalence Index," or the vegetation has morphological adaptations for prolonged inundation.

Table A-1
DEFINITIONS OF PLANT INDICATOR CATEGORIES

Indicator Categories	Abbreviation	Qualitative Description
Obligate	OBL	Almost always occur in wetlands
Facultative Wetland	FACW	Usually occur in wetlands but may occur in non-wetlands
Facultative	FAC	Occur in wetlands and non-wetlands
Facultative Upland	FACU	Usually occur in non-wetlands but may occur in wetlands
Upland	UPL	Almost never occur in wetlands

Hydrology

"The term 'wetland hydrology' encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic reducing conditions, respectively" (Environmental Laboratory 1987).

Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year (approximately 18 days for most of low-lying southern California). Hydrology criteria are evaluated based on the characteristics listed below (USACE 2008). Where positive indicators of wetland hydrology are present, the limit of the OHWM (or the limit of adjacent wetlands) is noted and mapped. Evidence of wetland hydrology is met by the presence of a single primary indicator or two secondary indicators.

Primary

- surface water (A1)
- high water table (A2)
- saturation (A3)
- water marks (B1; non-riverine)
- sediment deposits (B2; non-riverine)
- drift deposits (B3; non-riverine
- surface soil cracks (B6)
- inundation visible on aerial imagery (B7)
- water-stained leaves (B9)
- salt crust (B11)
- biotic crust (B12)
- aquatic invertebrates (B13)
- hydrogen sulfide odor (C1)
- oxidized rhizospheres along living roots (C3)
- presence of reduced iron (C4)
- recent iron reduction in tilled soils (C6)
- thin muck surface (C7)

Secondary

- watermarks (B1; riverine)
- sediment deposits (B2; riverine)
- drift deposits (B3; riverine)
- drainage patterns (B10)
- dry-season water table (C2)
- crayfish burrows (C8)
- saturation visible on aerial imagery (C9)
- shallow aquitard (D3)
- FAC-neutral test (D5)

In the absence of all other hydrologic indicators and in the absence of significant modifications of an area's hydrologic function, positive hydric soil characteristics are assumed to indicate positive wetland hydrology. This assumption applies unless the site visit was done during the wet season of a normal or wetter-than-normal year. Under those circumstances, wetland hydrology would not be present.

Soils

The USACE and EPA, in their administration of Section 404 of the Clean Water Act, rely on the National Technical Committee for Hydric Soils (NTCHS) for a definition of hydric soils. According to the NTCHS, "A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." (Federal Register 1994)

Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation. Soil matrix and mottle colors are identified at each sampling plot using a Munsell soil color chart (Kollmorgen 1994). Generally, an 18-inch or deeper pit is excavated with a shovel at each sampling plot unless refusal occurs above 18 inches.

Soils in each area are closely examined for hydric soil indicators, including the characteristics listed below. Hydric soil indicators are presented in three groups. Indicators for "All Soils" (A) are used in any soil regardless of texture, indicators for "Sandy Soils" (S) area used in soil layers with USDA textures of loamy fine sand or coarser, and indicators for "Loamy and Clayey Soils" (F) are used with soil layers of loamy very fine sand and finer (USACE 2008 and Vasilias et al. 2017).

- histosols (A1)
- histic epipedons (A2)
- black histic (A3)
- hydrogen sulfide (A4)
- stratified layers (A5)
- 1 cm muck (A9)
- depleted below dark surface (A11)
- thick dark surface (A12)
- sandy mucky mineral (S1)
- sandy gleyed matrix (S4)
- sandy redox (S5)
- stripped matrix (S6)
- loamy mucky mineral (F1)
- loamy gleyed matrix (F2)
- depleted matrix (F3)
- redox dark surface (F6)
- depleted dark surface (F7)
- redox depressions (F8)
- vernal pools (F9)
- 2 cm muck (A10)
- reduced vertic (F18)
- red parent material (TF2)

Hydric soils may be assumed to be present in plant communities that have complete dominance of obligate or facultative wetland species. In some cases, there is only inundation during the growing season and determination must be made by direct observation during that season, recorded hydrologic data, testimony of reliable persons, and/or indication on aerial photographs.

NON-WETLAND WATERS OF THE U.S.

The non-wetland Waters of the U.S. designation is met when an area has periodic surface flows but lacks sufficient indicators to meet the hydrophytic vegetation and/or hydric soils criteria. For purposes of delineation and jurisdictional designation, the non-wetland Waters of the U.S. boundary in non-tidal areas is the OHWM as described in the Section 404 regulations (33 CFR Part 328).

U.S. Geological Survey Mapping

The U.S. Geological Survey (USGS) quad maps are one of the resources used to aid in the identification and mapping of jurisdictional areas. Their primary uses include understanding the subregional landscape position of a site, major topographical features, and a project's position in the watershed.

In our experience, the designation of watercourse as a blue-line stream (intermittent or perennial) on USGS maps has been unreliable and typically overstates the hydrology of most streams. This has also been the experience of others, including the late Dr. Luna Leopold. Dr. Leopold was a hydrologist with USGS from 1952 to 1972, professor in the Department of Geology and Geophysics and Department of Landscape Architecture, University of California, Berkeley from 1972 to 1986, and Professor Emeritus from 1987 until his death in 2006. In regard to USGS maps, Dr. Leopold wrote, "I tried to devise a way of defining hydrologic criteria for the channels shown on topographic maps and developed some promising procedures. None were acceptable to the topographers, however. I learned that the blue lines on a map are drawn by non-professional, low-salaried personnel. In actual fact, they are drawn to fit a rather personalized aesthetic" (Leopold 1994).

REFERENCES

Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Technical report Y-87-1. Vicksburg (MS): U.S. Army Engineer Waterways Experiment Station. 100 p. with Appendices.

Federal Register. 1994. Changes in hydric soils of the United States. July 13.

Grumbles, B.H. and J.P. Woodley, Jr. 2007. Memorandum: Clean Water Act jurisdiction following the U.S. Supreme Court's decision in *Rapanos v. United States & Carabell v. United States*. June 5. 12 p.

Guzy, G.S. and R.M. Anderson. 2001. Memorandum: Supreme Court Ruling concerning CWA jurisdiction over isolated waters. U.S. Environmental Protection Agency and U.S. Army Corps of Engineers.

Kollmorgen Instruments Corporation. 1994. Munsell Soil Color Charts. Rev. ed. Baltimore (MD). Leopold, L.B. 1994. A View of the river. Cambridge (MA): Harvard University Press. 298 p.

Lichvar, R., D. Banks, W. Kirchner, and N. Melvin. 2016. The National Wetland Plant List: Update of Wetland Ratings. Phytoneuron 2016-30: 1 – 17. 28 April. Available from: http://wetland-plants.usace.army.mil/nwpl_static/index.html.

Lichvar, R. and S. McColley. 2008. A field guide to the identification of the ordinary high water mark(OHWM) in the arid west region of the western United States, A delineation manual. August. 68 p. plus Appendices.

Riley, D.T. 2005. Ordinary high water mark. RGL No. 05-05. 4 p.

U.S. Army Corps of Engineers (USACE). 2008. Regional supplement to the Corps of Engineers wetland delineation manual: arid west region. 2nd ver. Eds. J.S. Wakely, R.W. Lichvar, and C.V.

Noble. ERDC/EL TR-06-16. Vicksburg (MS): U.S. Army Engineer Research and Development Center. September.

U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA). 2007. U.S. Army Corps of Engineers jurisdictional determination form instructional guidebook. U.S. Army Corps of Engineers. May 30. 60 p.

U.S. Supreme Court. 2001. *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, No. 99-1178 (SWANCC). January 9.

Vasilias, L., G. Hurt, J Berkowitz, ed. 2017. Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, v 8.1. Natural Resources Conservation Service, in cooperation with the National Technical Committee for Hydric Soils. 32 pp, plus appendices.

Appendix H

State Jurisdictional Information

CALIFORNIA FISH AND WILDLIFE REGULATIONS

The California Department of Fish and Wildlife (CDFW) regulates alterations or impacts to streambeds or lakes (wetlands) under Fish and Game Code Sections 1600 through 1616 for any private, state, or local government or public utility-initiated projects. The Fish and Game Code Section 1602 requires any entity to notify the CDFW before beginning any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, and streams as well as lakes in the state.

In order to notify the CDFW, a person, state, or local governmental agency or public utility must submit a complete notification package and fee to the CDFW regional office that serves the county where the activity will take place (CDFW 2016). A fee schedule is included in the notification package materials. Under the Permit Streamlining Act (Government Code Sections 65920 et seq.), the CDFW has 30 days to determine whether the package is complete. If the requestor is not notified within 30 days, the application is automatically deemed to be complete.

Once the notification package is deemed to be complete, the CDFW will determine whether the applicant will need a Lake or Streambed Alteration Agreement (SAA) for the activity, which will be required if the activity could substantially adversely affect an existing fish and wildlife resource. If an SAA is required, the CDFW will conduct an on-site inspection, if necessary, and submit a draft SAA that will include measures to protect fish and wildlife resources while conducting the project. If the applicant is applying for a regular SAA (less than five years), the CDFW will submit a draft SAA within 60 calendar days after notification is deemed complete. The 60-day time period does not apply to notifications for long-term SAAs (greater than five years).

After the applicant receives the SAA, the applicant has 30 calendar days to notify the CDFW whether the measures in the draft SAA are acceptable. If the applicant agrees with the measures included in the draft SAA, the applicant will need to sign the SAA and submit it to the CDFW. If the applicant disagrees with any measures in the draft SAA, the applicant must notify the CDFW in writing and specify the measures that are not acceptable. Upon written request, the CDFW will meet with the applicant within 14 calendar days of receiving the request to resolve the disagreement. If the applicant fails to respond in writing within 90 calendar days of receiving the draft SAA, the CDFW may withdraw that SAA. The time periods described above may be extended at any time by mutual agreement.

After the CDFW receives the signed draft SAA, the CDFW will make it final by signing the SAA; however, the CDFW will not sign the SAA until it both receives the notification fee and ensures that the SAA complies with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.). After the applicant receives the final agreement, the applicant may begin the project, provided that the applicant has obtained any other necessary federal, state, and/or local authorizations.

WATER RESOURCE CONTROL BOARD REGULATIONS

SECTION 401 WATER QUALITY CERTIFICATION

Whenever a project requires a federal Clean Water Act (CWA) Section 404 permit or a Rivers and Harbors Act Section 10 permit, it must first obtain a CWA Section 401 Water Quality Certification. The Regional Water Quality Control Board (RWQCB) administers the 401 Certification program. Federal CWA Section 401 requires that every applicant for a Section 404 permit must request a Water Quality Certification that the proposed activity will not violate state and federal water quality standards.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The State Water Resource Control Board (SWRCB) and the RWQCB regulate the discharge of waste to waters of the State via the 1969 Porter-Cologne Water Quality Control Act (Porter-Cologne) as described in the California Water Code (SWRCB 2017). The California Water Code is the State's version of the federal CWA. Waste, according to the California Water Code, includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal. State waters that are not federal waters may be regulated under Porter-Cologne. A Report of Waste Discharge must be filed with the RWQCB for projects that result in discharge of waste into waters of the State. The RWQCB will issue Waste Discharge Requirements (WDRs) or a waiver. The WDRs are the Porter-Cologne version of a CWA 401 Water Quality Certification.

REFERENCES

California Department of Fish and Wildlife (CDFW). 2016. Notification of Lake or Streambed Alteration, Notification Instructions and Process. Available from: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3773&inline.

State Water Resources Control Board. 2017. Laws and Regulations. Sacramento, CA: State Water Resources Control Board, California Environmental Protection Agency. Available from: http://www.waterboards.ca.gov/laws_regulations/.

Appendix E

Cultural Resources Survey

HELIX Environmental Planning

Eastern Municipal Water District Lake Skinner Regional Water Transmission System Project

Cultural Resources Survey

August 2026 | 00244.00057.001

Prepared for:

Eastern Municipal Water District
P.O. Box 8300
Perris, CA 92572-8300

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

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National Archaeological Database Information

Authors:	Mary Robbins-Wade, M.A., RPA; James Turner, M.A., RPA; and Theodore G. Cooley, M.A., RPA
Firm:	HELIX Environmental Planning, Inc.
Client/Project:	Eastern Municipal Water District/Lake Skinner Regional Water Transmission System Project
Report Date:	August 2026
Report Title:	Cultural Resources Survey for the Eastern Municipal Water District Lake Skinner Regional Water Transmission System Project, Riverside County, California
Submitted to:	Eastern Municipal Water District P.O. Box 8300 Perris, CA 92572-8300
Type of Study:	Cultural resources survey
New Sites:	None
Previously Recorded Sites:	P-33-002970 (CA-RIV-2970), P-33-003839 (CA-RIV-3839), P-33-011037 (CA-RIV-6648), P-33-011038 (CA-RIV-6649), P-33-013871 (CA-RIV-11964), P-33-015734 (CA-RIV-8195), P-33-017222, P-33-017223, P-33-020551 (CA-RIV-10452), P-33-020732 (CA-RIV-10654)
USGS Quad:	*Winchester* and *Bachelor Mountain* 7.5' USGS quadrangles
Acreage:	141.22 acres
Key Words:	Riverside County; Communities of Winchester and French Valley; Eastern Municipal Water District; Luiseño; positive archaeological survey; cultural resources study; bedrock milling; historic roads; Township 5 South, Range 2 West; Township 6 South, Range 2 West; Township 7 South, Range 2 West

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ACBCI	Agua Caliente Band of Cahuilla Indians
AMSL	above mean sea level
APE	Area of Potential Effects
ARVV	air release and vacuum valves
BP	before present
BPS	booster pump station
cal	calibrated
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CHRIS	California Historical Resources Information System
CMU	cement masonry unit
CRHR	California Register of Historical Resources
District	Eastern Municipal Water District
EIC	Eastern Information Center
EIR	Environmental Impact Report (EIR)
EMWD	Eastern Municipal Water District
HELIX	HELIX Environmental Planning, Inc.
I-	Interstate
MBMI	Morongo Band of Mission Indians
Metropolitan	The Metropolitan Water District of Southern California
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NOP	Notice of Preparation
NPS	National Park Service
National Register	National Register of Historic Places
NRHP	National Register of Historic Places
OHP	Office of Historic Preservation

ACRONYMS AND ABBREVIATIONS (cont.)

Pechanga	Pechanga Band of Indians
PRC	Public Resources Code
project	Lake Skinner Regional Water Transmission System Project
PZ	Pressure Zone
Santa Fe	Atchison, Topeka and Santa Fe Railway
SCIC	South Coastal Information Center
SD	San Diego
SLR	San Luis Rey
SR	State Route
STP	shovel test pit
TCA	traditionally and culturally affiliated
TCP	Traditional Cultural Places
TCR	Tribal Cultural Resources
THPO	Tribal Historic Preservation Officer
UCSB	University of California, Santa Barbara
USGS	U.S. Geological Survey
WEAP	Worker Environmental Awareness Program
WTP	Water Treatment Plant

EXECUTIVE SUMMARY

HELIX Environmental Planning, Inc. (HELIX) was contracted by Eastern Municipal Water District (EMWD) to conduct a cultural resources survey for the proposed Lake Skinner Regional Water Transmission System Project (project), situated in western Riverside County, California. The project would be located in the vicinity of The Metropolitan Water District's Robert A. Skinner Water Treatment Plant (Skinner WTP) near the intersection of Auld and Borel roads or along Auld Road near its intersection with Leon Road. The new pump station would be sited near the new turnout connection. The transmission pipeline would extend in a north-northwest direction approximately 10 to 12 miles from the Skinner WTP through the southern Perris Valley area to a future high-pressure pipeline located in Simpson Road that would deliver supplies to proposed storage reservoirs at Double Butte. The pipeline would become part of a "backbone" system of high-pressure transmission lines providing service to the District's 1627 Pressure Zone (PZ). It would also improve grid stability for the booster pump stations (BPSs) that feed adjacent higher-pressure zones.

HELIX conducted a cultural resources survey for the project including a records search, Sacred Lands File search, Native American outreach, a review of historic aerial photographs and maps, and a pedestrian survey. This report details the methods and results of the cultural resources survey and has been prepared to comply with the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA).

A records search conducted at the Eastern Information Center (EIC) in May 2022 and updated at the South Coastal Information Center (SCIC) in June 2025 indicated that approximately 150 previous cultural resources studies have been conducted within one-half mile of the project. The records search results also indicated that a total of 157 cultural resources have been previously recorded within one-half mile of the project's Area of Potential Effects (APE), 10 of which are within or cross the APE. These resources consist of six bedrock milling sites, three historic-era roads, and the historic San Diego Aqueduct.

The field investigations included intensive pedestrian surveys of the project area by HELIX archaeologists and Native American tribal cultural monitors from the Pechanga Band of Indians from August 15 to 17, 2022, and on March 2, 2023, as well as a field visit by a HELIX archaeologist on June 20, 2025. The survey did not result in the identification of any newly recorded cultural resources, but materials or features related to five previously recorded resource were identified within the APE. No cultural material was identified at two of the previously recorded sites; one of these (P-33-002970) may have been mismapped but is also recorded as part of another site (P-33-003839), which was reidentified; a few weathered boulders were noted in the location of the other site that was not found (P-33-011038). Although the records search map shows P-33-011037 as extending into the APE, the site was described as being on a knoll and was mapped on the site record as north of Auld Road, thus placing it outside the APE. The knoll is fenced and could not be accessed as part of the current study. P-33-017223 could not be accessed due to fences and locked gates. The segment of P-33-015734 (the San Diego Aqueduct) recorded within the APE was not observed, as it is located underground, but its presence within the APE is known.

Based on the results of the current study, one historical resource (per CEQA)/historic property (per NHPA), the San Diego Aqueduct, will be relined as part of the project. The Aqueduct was assessed as eligible under Criterion A as a driving and enabling force in the economic development of San Diego, but not eligible under Criteria B, C, and D. Its significance is foremost reflected in its location, alignment, and

overall length, and secondarily in its materials and design. The proposed project would fully retain the resource's location, alignment, and overall length. Only a small percentage of the aqueduct would be impacted by relining and would not entail the loss of existing materials. The connections are a small part of the overall aqueduct and are not significant on their own. Because the primary characteristics would be retained and preserved, and no materials would be lost, the project would not have an adverse effect on the historical resource. One potentially eligible resource will be affected by the project; this resource (P-33-002970/P-33-003839) will require evaluation to assess its eligibility. The remaining resources within the APE are not historic properties/historical resources. However, as noted in this report, portions of the alignment could not be surveyed due to lack of access or other limiting factors. Therefore, there is a potential for additional historic properties/historical resources to be present that could be affected by the project. In addition, numerous cultural resources are known in proximity to the project area but outside the project APE, including a large archaeological/historic district that has been identified by Pechanga as a Traditional Cultural Place (TCP)/Tribal Cultural Resource (TCR), and the general area is sensitive for cultural resources. Based on this, it is recommended that an updated cultural resources survey of each phase be conducted prior to development of that phase.

Based on the presence of cultural resources within and in proximity to the project, and the fact that portions of the APE could not be surveyed due to lack of access, active agricultural uses, and other factors that may be obscuring cultural resources within the APE, it is recommended that an archaeological and Native American monitoring program be implemented for ground-disturbing activities. The monitoring program would include attendance by the archaeologist and Native American monitor(s) at a preconstruction meeting with the grading contractor and the presence of archaeological and Native American monitors during initial ground-disturbing activities. Both archaeological and Native American monitors would have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. If significant cultural material is encountered, the archaeological Principal Investigator and tribal representatives would coordinate with District staff to develop and implement appropriate avoidance, treatment, or mitigation measures.

1.0 INTRODUCTION

HELIX Environmental Planning, Inc. (HELIX) was contracted by the Eastern Municipal Water District (EMWD) to provide cultural resources services for the Lake Skinner Regional Water Transmission System Project (project), situated in western Riverside County, California. The proposed project would receive and convey treated water deliveries from The Metropolitan Water District of Southern California's (Metropolitan) Robert A. Skinner Water Treatment Plant (Skinner WTP). HELIX conducted a cultural resources survey including a records search, Sacred Lands File search, Native American outreach, a review of historic aerial photographs and maps, and a pedestrian survey. This report details the methods and results of the cultural resources study and has been prepared to comply with the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA). This report also includes a brief analysis of an alternative alignment to the project.

1.1 PROJECT LOCATION

The project is located in unincorporated Riverside County, California (Figure 1, *Regional Location*). The project is located east of Interstate (I-) 215, south of State Route (SR) 74, and west of the Skinner Reservoir, within Sections 27 and 34 of Township 5 South, Range 2 West; Sections 3, 9, 10, 16, 17, 20, 29, and 32 of Township 6 South, Range 2 West; and Sections 3, 4, 5, 6, 7, 8, 9, and 10 of Township 7 South, Range 2 West, on the U.S. Geological Survey (USGS) 7.5-minute *Winchester* and *Bachelor Mountain, California* quadrangles (Figures 2a-b, *USGS Topography*). The transmission pipelines would extend in an overall northern direction from the Skinner WTP approximately 14 miles through the southern Perris Valley area to the community of Winchester. The northern end of the project occurs north of Domenigoni Parkway and west of Diamond Valley Lake with the southern end located along Washington Street and west of Lake Skinner (Figure 3, *Project Location*). The new booster pump station (BPS) and turnout would be sited near the intersection of Auld Road and Leon Road, approximately two miles west of the Skinner WTP.

1.2 PROJECT DESCRIPTION

The project includes construction and operation of three main components: (1) a new water service connection (turnout) to transfer treated water deliveries from the Skinner WTP to the District; (2) a new booster pump station that would connect to the turnout to pump water to the District's service area; and (3) new and relined transmission pipelines to deliver water from Skinner WTP to the District's service area. Collectively, these components comprise the Project and would be sized to meet the buildout demand condition of 140 cubic feet per second (cfs) of additional treated water supplies.

The project would be implemented in four phases over a 20-year period and thus the analysis in this report is programmatic in nature due to the current availability of project-specific details.

Staging area locations have not yet been identified; staging areas would be located within developed property or within a parcel that would be acquired by the District for the project and within the study area surveyed for this report.

Details regarding the primary components of the project are provided below.

1.2.1 Water Service Connection (Turnout) to Metropolitan Facility

The project would involve the construction of a turnout near the intersection of Auld Road and Leon Road that would initially connect to Metropolitan's existing Auld Valley Pipeline. The turnout would provide the connection point to transfer treated water from the Skinner WTP (conveyed through the existing Auld Valley Pipeline) to proposed facilities (BPS and transmission pipelines) owned and operated by the District. The turnout connection would consist of equipment housed in two underground vaults (rooms) spaced about 30 feet apart. The turnout would change the direction of the water flow and regulate the pressure and velocity from the Metropolitan pipeline to the District's facilities.

1.2.2 Booster Pump Station

The new BPS, located at the intersection of Auld Road and Leon Road adjacent to the proposed turnout, would receive treated water from the Skinner WTP via the existing Auld Valley Pipeline and proposed turnout. The BPS would function to increase water pressure in the proposed transmission pipelines north of the BPS (described below) enabling delivery of water to the District's 1627 PZ.

The BPS would be located on the north side of Auld Road, either to the west or east of Leon Road. For planning purposes, a 350-foot by 500-foot site (approximately four acres) is proposed to accommodate the BPS. The site layout assumes a 25-foot landscaped setback along the frontage road. An access driveway with motorized rolling access gates would provide ingress/egress to the site, with an eight-foot cement masonry unit (CMU) perimeter wall securing the entire site. A service road would encircle the pump building allowing for maintenance access and operating space, including for the removal and maintenance of BPS components (pumps, motors, valves, pipe, generators, etc.). The service road includes parking spaces for maintenance staff and service equipment.

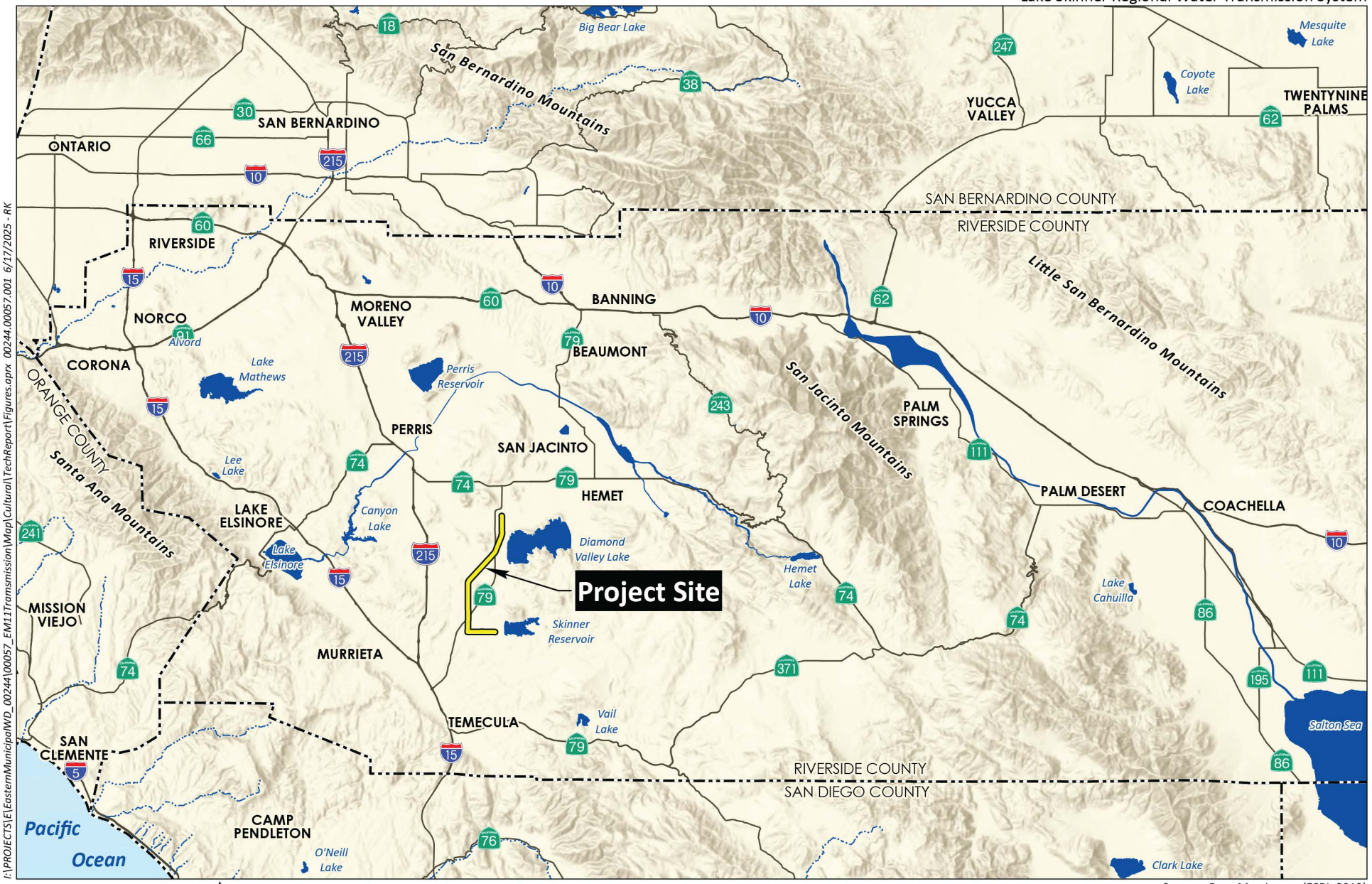
Mechanical and electrical pumping equipment would be located within a common, single-story masonry block building. It would include adequate space to accommodate the number of pumps needed for the planned maximum buildout capacity of 140 cfs.

1.2.3 Transmission Pipeline

As part of Phase 1 of the project, the District would reline either the existing San Diego (SD) Pipeline 1 or SD Pipeline 2 with steel pipe from the new BPS at the intersection of Auld Road and Leon Road north to a location near the Leon Road/Fowler Drive intersection. Within this reach, SD Pipelines 1 and 2 are located within a Metropolitan easement that parallels the eastern side of Leon Road. The relining of SD Pipeline 1 or SD Pipeline 2 as part of Phase 1 of the project would terminate at a service connection to the District's 1627 PZ, located at the intersection of Leon Road and Fowler Drive. The District's use of Metropolitan's SD Pipeline 1 or SD Pipeline 2 and associated easement would require approval by Metropolitan and/or the sale/transfer of these components from Metropolitan to the District. Whichever pipeline, SD Pipeline 1 or SD Pipeline 2, is not relined as part of the project would continue to convey surface water flows from Diamond Valley Lake to the downstream location.

1.2.4 Phase 2

Phase 2 consists of relining approximately 16,900 feet of either SD Pipeline 1 or SD Pipeline 2 that extends from the service connection near the Leon Road/Fowler Drive intersection in a northeastern direction within a Metropolitan easement to a service connection to the District's 1627 PZ at Holland



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Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1

Proposed Alignment

Winchester
Reservoir
ATCHISON
TOPEKA
BM 1483
BM 1503
NEWPORT
PATTERSON
GRAND AVE
SIMPSON RD
PATTON AVE
HOLLAND ROAD
SCOTT ROAD
OLIVE AVE
LEON ROAD
SAN DIEGO AQUEDUCT
DOMENIGONI CANAL
WINCHESTER Valley
Windmill
Well
Res
Reservoirs
Siphon

0 2,000 Feet

Source: Winchester 7.5' Quad (USGS)

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HELIX Environmental Planning

USGS Topography

Figure 2a

Proposed Alignment

Existing EM-17 Booster Pump Station/Turnout Site

Potential EM-11 Booster Pump Station/Turnout Sites

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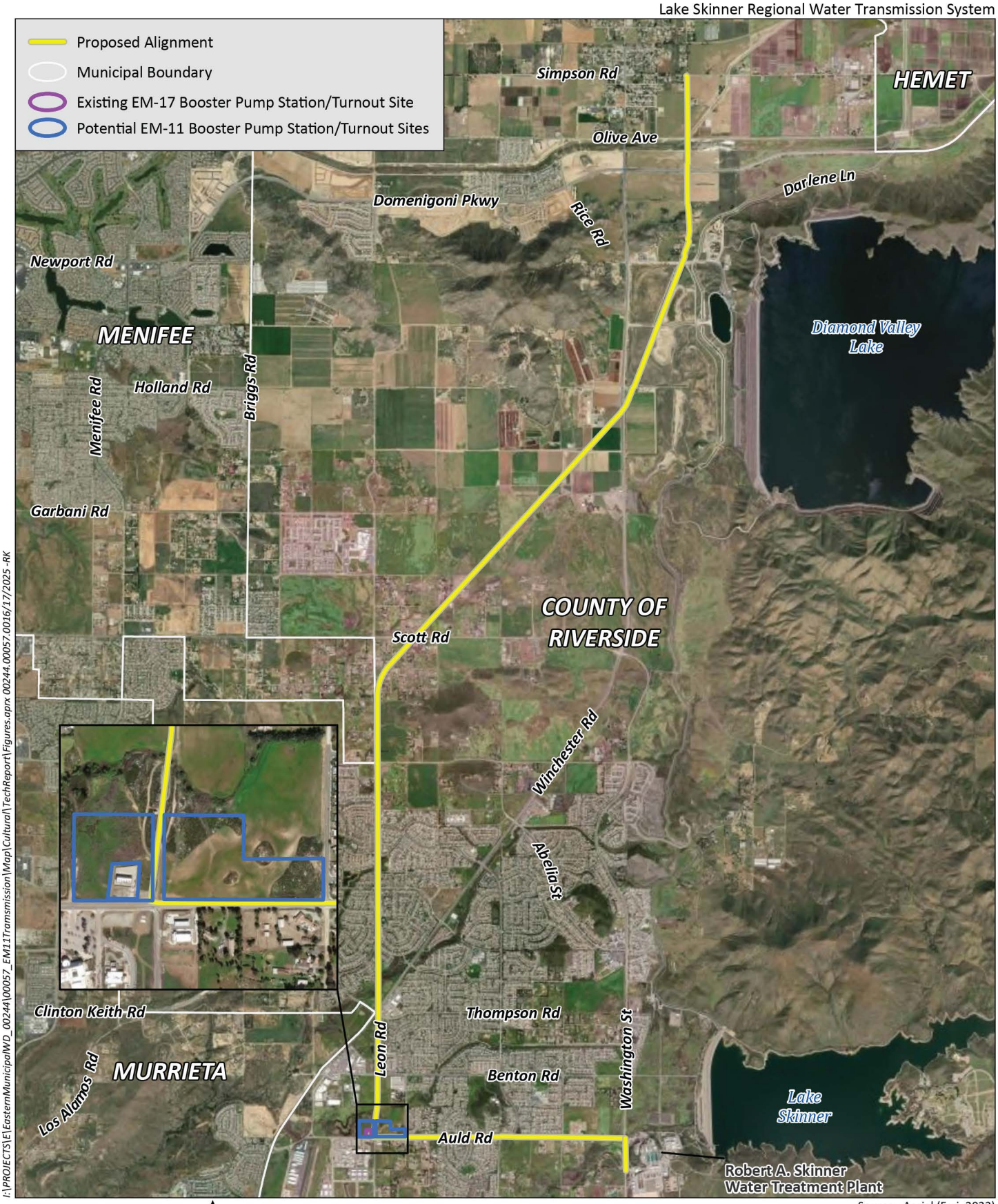
0 2,000 Feet

Source: Winchester and Bachelor Mtn. 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2b



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0 5,600 Feet

Source: Aerial (Esri, 2022)

HELIX Environmental Planning

Project Location

Figure 3

Road east of State Route (SR) 79. As mentioned above, the District's use of Metropolitan's SD Pipeline 1 or SD Pipeline 2 and associated easement would require approval by Metropolitan and/or the sale/transfer of these components from Metropolitan to the District. Whichever pipeline, SD Pipeline 1 or SD Pipeline 2, is not relined as part of the project would continue to convey surface water flows from Diamond Valley Lake to the downstream location.

1.2.5 Phase 3

Phase 3 consists of installing approximately 6,600 feet of new 60-inch-diameter pipeline from the service connection at Holland Road in a northeastern direction to approximately 1,300 feet north of Newport Road. This reach is within Metropolitan's easement adjacent to SD Pipelines 1 and 2. The District's use of Metropolitan's easement would require approval by Metropolitan and/or the sale/transfer of the easement from Metropolitan to the District. At the point 1,300 feet north of Newport Road, the pipeline would leave Metropolitan's easement and be located within the existing public right-of-way of the unpaved Patterson Avenue for another approximately 7,000 feet until it reaches Simpson Road. The new pipeline is anticipated to be welded steel pipe with cement-mortar lining and coating.

1.2.6 Phase 4

The final phase, Phase 4, consists of installing a new pipeline parallel to the portions of SD Pipeline 1 or 2 relined during Phase 1 (from the BPS to Fowler Drive) and Phase 2 (from Fowler Drive to Holland Road) to increase the transmission pipeline capacity from 40 to 140 cfs. The parallel pipe from the BPS to Fowler Drive would be 60 inches in diameter and would be constructed within Metropolitan's existing easement. Between Fowler Drive and Holland Road, the parallel pipe would be 48 inches in diameter and would also be constructed within Metropolitan's existing easement. The District's use of Metropolitan's easement would require approval by Metropolitan and/or the sale/transfer of the easement from Metropolitan to the District. The new pipeline is anticipated to be welded steel pipe with cement-mortar lining and coating. Both the new pipeline installed during Phase 4 and the pipeline relined during Phase 2 (which would be parallel to each other) would connect to the 60-inch-diameter pipeline installed during Phase 3 at a single location at Holland Road using a manifold (i.e., a larger pipe section into which smaller pipes lead).

It is assumed that capacity would no longer be available in the Auld Valley Pipeline at Phase 4 of the project and that a new 72-inch-diameter pipeline would be installed within Borel Road and Auld Road, connecting the new turnout and BPS to the Lake Skinner WTP. The new pipeline would function as the suction pipe for the BPS.

The minimum permanent easement or right-of-way width required for operation of the pipeline would be 60 feet. Where the pipeline would be constructed outside or at the edge of the public right-of-way, attempts shall be made to provide approximately 30 feet on either side of the pipeline.

Pipeline appurtenances would be required for the proper operation and maintenance of the transmission pipelines. Appurtenances would include:

- combination air-release and vacuum valves (ARVV), which would be located in small above-grade vault structures, to relieve excess pressure or vacuum in the pipe;

- blow-offs, which would be located in below-grade vault structures, to dewater the pipeline into natural creeks, channels, waterways, and/or storm drains when a shutdown of the pipeline is needed;

- isolation valves, which would be located in below-grade vault structures, to stop the flow of water in a particular direction;

- service connections to the District's 1627 PZ;

- discharge connections; and other miscellaneous appurtenances.

1.3 REGULATORY FRAMEWORK

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. Significant resources are those resources that have been found eligible for listing in the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP; National Register), as applicable.

1.3.1 National Historic Preservation Act

Federal regulations that would be applicable to the project if there is a federal nexus (e.g., permitting or funding from a federal agency) consist of the NHPA and its implementing regulations (16 United States Code 470 et seq., 36 Code of Federal Regulations [CFR] Part 800). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on "historic properties," that is, properties that are eligible for the NRHP. To be eligible for the NRHP, a historic property must be significant at the local, state, or national level under one or more of the following four criteria:

A. Associated with events that have made a significant contribution to the broad patterns of our history;

B. Associated with the lives of persons significant in our past;

C. Embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or

D. Has yielded or may be likely to yield, information important in prehistory or history.

1.3.2 California Environmental Quality Act

CEQA, Public Resources Code (PRC) 21084.1 and CEQA Guidelines, California Code of Regulations (CCR) Title 14 Section 15064.5 discuss significant cultural resources as "historical resources," and define them as:

- Resource(s) listed in or determined eligible by the State Historical Resources Commission for listing in the CRHR (14 CCR Section 15064.5[a][1]);

- Resource(s) either listed in the NRHP or in a "local register of historical resources" or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of

the PRC, unless "the preponderance of evidence demonstrates that it is not historically or culturally significant" (14 CCR Section 15064.5[a][2]);

- Resources determined by the Lead Agency to meet the criteria for listing in the CRHR (14 CCR Section 15064.5[a][3]).

For listing in the CRHR, a historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

1. It is 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;

2. It is associated with the lives of persons important to local, California, or national history;

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values;

4. It has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Under 14 CCR Section 15064.5(a)(4), a resource may also be considered a "historical resource" for the purposes of CEQA at the discretion of the lead agency.

1.3.3 Integrity

All resources that are eligible for listing in the NRHP or CRHR must have integrity, which is the authenticity of a historic property/historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historic properties/ historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the particular criteria under which it is proposed for nomination. Under Section 106 of the NHPA, actions that alter any of the characteristics that qualify a property for eligibility for listing in the NRHP "in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association" (36 CFR 800.5[a]) constitute an adverse effect to the historic property.

1.3.4 Native American Heritage Values

Federal and state laws mandate that consideration be given to the concerns of contemporary Native Americans with regard to potentially ancestral human remains, associated funerary objects, and items of cultural patrimony. Consequently, an important element in assessing the significance of the study area has been to evaluate the likelihood that these classes of items are present in areas that would be affected by the proposed project.

Potentially relevant to Native American archaeological sites is the category termed Traditional Cultural Places (TCPs) in discussions of cultural resource management performed under federal auspices. A TCP

"is defined as a building, structure, object, site, or district that may be listed in (or determined eligible for listing in) the National Register for its significance to a living community because of its association with cultural beliefs, customs, or practices that are rooted in the community's history and that are important in maintaining the community's cultural identity" (National Park Service [NPS] 2024:1). In the past, the term "traditional cultural properties" was used, in keeping with the NHPA's use of the term "historic properties." The updated guidance (NPS 2024) uses the term "traditional cultural *places*" to avoid any implication of commodification of cultural heritage and to be in keeping with the National Register of Historic *Places*. While some TCPs may be readily identifiable, others may be difficult to recognize for someone outside the community. "The existence and significance of culturally significant places can be understood first and foremost by learning from the people who live in, use, or value the area, or did so historically" (NPS 2024:13). Native American tribes are not the only living communities who may hold TCPs, although tribal TCPs tend to be more prevalent than those of other communities.

"Tradition" implies the passage over time of beliefs, customs, practices, language, and other intangible aspects of culture. Traditional group identify may be expressed in Indigenous knowledge, religious beliefs, ceremonial practices, dress (daily or ceremonial), or language. Cultural resources can include TCPs, such as gathering areas, landmarks, and ethnographic locations, in addition to archaeological districts. Generally, a TCP may consist of a single site, or group of associated archaeological sites (district or traditional cultural landscape), or an area of cultural/ethnographic importance.

In California, the Traditional Tribal Cultural Places Bill of 2004 requires local governments to consult with Native American Tribes during the project planning process, specifically before adopting or amending a General Plan or a Specific Plan, or when designating land as open space for the purpose of protecting Native American cultural places. The intent of this legislation is to encourage consultation and assist in the preservation of Native American places of prehistoric, archaeological, cultural, spiritual, and ceremonial importance. State Assembly Bill (AB) 52, effective July 1, 2015, introduced the Tribal Cultural Resource (TCR) as a class of cultural resource and additional considerations relating to Native American consultation into CEQA. As a general concept, a TCR is similar to the federally defined TCP; however, it incorporates consideration of local and state significance and required mitigation measures under CEQA. A TCR may be considered significant if included in a local or state register of historical resources; or determined by the lead agency to be significant pursuant to criteria set forth in PRC §5024.1; or is a geographically defined cultural landscape that meets one or more of these criteria; or is a historical resource described in PRC §21084.1; or is a unique archaeological resource described in PRC §21083.2; or is a non-unique archaeological resource if it conforms with the above criteria.

1.4 AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) for the Lake Skinner Regional Water Transmission System Project is defined as the pipeline alignment and a 50-foot buffer on each side of the alignment centerline, as well as the potential BPS location and turnout sites (see Figures 2a-b and 3). Specific staging areas have not yet been identified; staging areas would be within the APE addressed in this report or within developed locations.

1.5 PROJECT PERSONNEL

HELIX conducted a cultural resources survey to assess whether the project would have effects on cultural resources. Mary Robbins-Wade, M.A., RPA, served as Principal Investigator and senior report author. Theodore G. Cooley, M.A., RPA, and James Turner, M.A., RPA, are report co-authors. HELIX

archaeologists Julie Roy, B.A.; Mary Villalobos, B.A.; and Lanice Powless, B.A., conducted the field surveys with Native American monitors Robert Cordova and Cameron Linton from Pechanga Cultural Resources, representing the Pechanga Band of Indians (Pechanga). Resumes for key HELIX personnel are presented in Appendix A. This report addresses the methods and results of the cultural resources survey, which included a records search, Sacred Lands File search, Native American outreach, review of historic maps and aerial photographs, and an intensive pedestrian field survey.

2.0 PROJECT SETTING

2.1 NATURAL SETTING

The project area is located along the transition between the eastern margin of the floodplain of the lower San Jacinto River Valley and the adjacent mountain foothills of the rocky Lakeview Mountains immediately to the north and San Jacinto Mountains adjacent to the east, in westernmost Riverside County, California. In the project area, the floodplain is dissected by several named and unnamed tributary drainages to the river transecting the project area, including Warm Springs Creek and Tucalota Creek. Diamond Valley Lake and Skinner Reservoir lie approximately one mile to the east, and Perris Reservoir is approximately 11 miles to the northwest of the project APE. Elevations in the project APE range from approximately 1,500 feet above mean sea level (AMSL) near the northern project extent to approximately 1,370 feet AMSL in the southern portion of the APE. Land uses within and surrounding the project area include agricultural fields, dairy and livestock facilities, transportation infrastructure, water conveyance infrastructure, and intermittent areas of residential development.

Geologically, the project area contains a mixture of river- and tributary-stream-deposited alluvium, composed mostly of sand and gravel of late Pleistocene to early Holocene age, as well as alluvial and colluvial fan deposits emanating from the adjacent foothills of early to late Pleistocene or early Holocene age. Also, within the project area, rising through these recent sediments are several knolls composed mostly of granitic bedrock. These knolls and the adjacent foothills are mapped as mostly Cretaceous era tonalite, gabbro, and/or granodiorite granitic bedrock but with older metasedimentary rocks also present, intermixed within the granitic bedrock (Morton n.d.; Morton and Kennedy n.d.; Rogers 1965). While the project area contains predominately alluvial or colluvial associated soils, in knoll areas, bedrock-derived soils can occur.

While the rocky foothill areas within and along the eastern and northern margins of the project area currently contain mostly non-native grassland and weeds with intermittent areas of sage scrub vegetation, it seems probable that, prehistorically, sage scrub vegetation predominated in these adjacent foothill areas, with intermittent areas of native grassland. It also seems likely that in the alluvial floodplain areas of the San Jacinto River Valley and the alluvial fan deposits that predominate in the project area, prior to tilling in historic and modern times, the vegetation also contained a mixture of native grassland and sage scrub vegetation, as well as riparian woodland plants along several of the more well-watered tributary drainages to the San Jacinto River approximately eight miles to the west. Prior to European contact, the natural vegetation of the sage scrub community included plants such as California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), flat-top buckwheat (*Eriogonum fasciculatum*), broom baccharis (*Baccharis sarothroides*), wild onion (*Allium haematochiton*), laurel sumac (*Malosma laurina*), San Diego sunflower (*Viguiera laciniata*), golden-yarrow (*Eriophyllum confertiflorum*), sawtooth goldenbush (*Hazardia squarrosa*), yucca (*Yucca schidigera*, Y. *whipplei*), prickly pear cactus (*Opuntia occidentalis*), and scrub oak (*Quercus dumosa*), which would have covered most of

the adjacent hill and mountain areas, with interspersed areas of native grasslands (*Stipa*, *Elymus*, *Poa*, and *Muhlenbergia*). The likely stands of riparian and riparian woodland communities along the San Jacinto River and its well-watered tributaries would have included plants such as sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), coast live oak (*Quercus agrifolia*), and willow (*Salix* sp.) (Munz 1974). Major wildlife species found in this environment during the precontact period were coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), grizzly bear (*Ursus arctos*), mountain lion (*Felis concolor*), rabbit (*Sylvilagus audubonii*), jackrabbit (*Lepus californicus*), and various rodents, the most notable of which are the valley pocket gopher (*Thomomys bottae*), California ground squirrel (*Otospermophilus beecheyi*), and dusky footed woodrat (*Neotoma fuscipes*) (Head 1972). Rabbits, jackrabbits, and rodents were very important to the Indigenous precontact diet; deer were somewhat less significant for food, but were an important source of leather, bone, and antler. Many of the native plant species found in these vegetation communities and those found in the project vicinity are known to have been used by Native populations for food, medicine, tools, and ceremonial and other uses (Bean 1978; Bean and Shipek 1978; Bean and Saubel 1972; Hedges and Beresford 1986; Oxendine 1983). Many of the animal species living within these communities such as rabbits, deer, small mammals, and birds would have been used by Native inhabitants as well.

2.2 CULTURAL SETTING

The Native American people indigenous to the project area, the Luiseño, do not necessarily recognize temporal distinctions made by archaeologists and linguists/linguistic anthropologists. Generally, traditional knowledge holds that the Indigenous people have been here since time immemorial. The discussion below represents archaeological knowledge and is not fully reflective of traditional Indigenous knowledge.

2.2.1 Precontact Period

2.2.1.1 Introduction

Precontact resources are places that contain the material remains of activities carried out by the Native population of the area (Native Americans) prior to the arrival of Europeans in California. The term "prehistory" originated in academia to mean the time before there were written records, but it is widely understood that the term does not mean "before history;" Native American occupation is known to extend back at least 10,000 years, representing a Native American "history" that long predates the arrival of Europeans. Because it is a nearly universal term used in cultural resources management and in academia to refer to Native American sites that predate European contact, the usage of "prehistoric" and "prehistory" is retained in some places in this report; however, where possible, the term "precontact" has replaced "prehistoric."

Moratto (1984) has previously defined eight archaeological regions and 16 subregions for California. The location of the project places it within the boundary of the San Diego subregion of the Southern Coast Region, but it is also located adjacent to the boundary with the Colorado River subregion of the Desert Region (Moratto 1984:148, Figure 4.13). The following culture history outlines and briefly describes the known precontact cultural Traditions and chronology of archaeological sites in the vicinity of the project. The approximately 10,000 years of documented prehistory of the region has often been divided into three periods: Early Prehistoric Period (San Dieguito Tradition [Warren 1968]), Archaic Period (Milling Stone Horizon [Wallace 1955], Encinitas Tradition [Warren 1968]), and Late Prehistoric Period.

Prior to 1984, when Moratto defined the San Diego subregion, little archaeological investigation had occurred in the westernmost Riverside and San Bernardino counties portion of this subregion. This paucity of archaeological information limited the ability of early researchers to assess the cultural and temporal associations for the archaeological resources in this part of the subregion. One of the few early studies to occur in this area prior to 1984 was conducted near Temecula in the early 1950s at a site identified as the ethnohistoric village of *Temek*u (McCown 1955). The investigation produced a substantial, primarily Late Prehistoric Period, artifact assemblage, but with some possible late Archaic materials as well. Another study, conducted in the 1970s for the construction of the Perris Reservoir (O'Connell et al. 1974, eds.), consisted of investigations at several sites and was, perhaps, the most extensive study conducted in the area prior to 1984. The results, which included several radiocarbon dates, indicated a predominance of occupation at the sites during the Late Prehistoric Period, after A.D. 1500, but with some limited evidence for occupation as early 380 B.C. (Bettinger 1974:159-162). During the last nearly 40 years since 1984, several archaeological studies have occurred in western Riverside County that have served to substantially augment the archaeological record for the area (e.g., Applied EarthWorks, Inc. 2001; Grenda 1997; Keller and McCarthy 1989; McCarthy 1986, 1987). Based on the information provided by these and other subsequent studies in the area, Sutton and Gardner (2010) and others have recently begun to define the early prehistory of this area of the San Diego subregion and how it fits in with the previously better-known areas of the subregion. The three chronological periods defined for the prehistory of the San Diego subregion are described below.

2.2.1.2 Early Prehistoric Period

The Early Prehistoric Period represents the time of the entrance of the first known human inhabitants into California. In some areas of California, it is referred to as the Paleo-Indian period, and it is associated with the Big-Game-Hunting activities of the peoples of the last Ice Age, occurring during the Terminal Pleistocene and the Early Holocene, beginning circa 11,000 to 15,000 years ago (Erlandson et al. 2007). In the western United States, the most substantial evidence for the Paleo-Indian or Big-Game-Hunting peoples derives from finds of large, fluted spear and projectile points (Fluted-Point Tradition) at sites in places such as Clovis and Folsom in the Great Basin and the Desert Southwest (Moratto 1984:79-88). In California, most of the evidence for the Fluted-Point Tradition derives principally from areas along the western margins of the Great Basin including the eastern Sierras and the Mojave Desert, and in the southern Central Valley (Dillon 2002; Rondeau et al. 2007). Elsewhere in California, with the exception of a site in the north coast ranges in northwestern California, CA-LAK-36, only isolated occurrences of fluted spear points have occurred, scattered around the state (Dillon 2002; Rondeau et al. 2007). These isolated occurrences have, however, included two fluted points or fluted point fragments recently discovered in, or in close proximity to, the San Diego subregion; one in the mountainous eastern area of San Diego County approximately 36 miles to the southeast of the project area (Kline and Kline 2007) and another along the coast approximately 40 miles to the west of the project area, in adjacent Orange County (Fitzgerald and Rondeau 2012). Two examples have also been discovered to the south in Baja California (Des Lauriers 2008; Hyland and Gutierrez 1995). Despite these isolated occurrences of fluted points in the San Diego subregion and Baja California, none have been found, to date, in the western Riverside or San Bernardino counties area (Dillon 2002; Rondeau et al. 2007).

The earliest sites in the San Diego subregion, documented to be over 9,000 years old, belong to the San Dieguito Tradition (Warren et al 2008; Warren and Ore 2011). The San Dieguito Tradition, with an artifact assemblage distinct from that of the Fluted Point Tradition, has been documented mostly in the coastal and near coastal areas in San Diego County (Carrico et al. 1993; Rogers 1966; True and Bouey

1990; Warren 1966; Warren and True 1961), with possible evidence for it also recently found in the eastern mountains of San Diego County (Pigniolo 2005) as well as in the southeastern California deserts (Rogers 1939, 1966; Warren 1967). The content of the earliest component of the C.W. Harris Site (CA-SDI-149/316/4935B), located along the San Dieguito River, approximately 24 miles to the south of the project, formed the basis upon which Warren and others (Rogers 1966; Warren 1966, 1967; Warren and True 1961) identified the "San Dieguito complex," which Warren later reclassified as the San Dieguito Tradition (1968). This Tradition is characterized by an artifact inventory consisting almost entirely of flaked stone biface and scraping tools but lacking the fluted points associated with the Fluted-Point Tradition. Diagnostic artifact types and categories associated with the San Dieguito Tradition include elongated bifacial knives, scraping tools, crescentics, and, in the desert areas, Silver Lake, Lake Mojave, and leaf-shaped projectile points (Knell and Becker 2017; Rogers 1939; Vaughan 1982; Warren 1967). Some researchers interpret the San Dieguito Tradition/complex as having a primarily, but not exclusively, hunting subsistence orientation, but sufficiently hunting-oriented as to be distinct from the more gathering-oriented complexes of traits that were to follow in the Archaic Period (Warren 1968; Warren et al. 2008). Other researchers see the San Dieguito subsistence system as less focused on hunting and more diversified, and, therefore, possibly ancestral to, or a developmental stage for, the subsequent, predominantly gathering-oriented, Encinitas Tradition, denoted in the San Diego area as the "La Jolla/Pauma complex" (True 1958, 1980) during the Archaic Period (cf. Bull 1983; Ezell 1987; Gallegos 1985, 1987, 1991; Koerper et al. 1991). While little definite evidence for the San Dieguito Tradition has been discovered in other coastal and near-coastal areas of southern California outside of San Diego County, some evidence has recently been attributed to it in a coastal area to the north in Los Angeles County (Sutton and Grenda 2012).

2.2.1.3 Archaic Period

During the subsequent Archaic Period, artifact assemblages of the Milling Stone Horizon/Encinitas Tradition occur at a range of coastal and adjacent inland sites, and, in contrast to those of the previous Early Prehistoric Period, are relatively common in the study area region. These assemblages appear to indicate that a relatively stable, sedentary, predominantly gathering complex, possibly associated with one people, was present in the coastal and immediately inland areas of southern California for more than 7,000 years (Grenda 1997; Sutton and Gardner 2010; Warren 1968; Warren et al. 2008).

Warren has proposed that during the Archaic Period in the south coastal region, the Encinitas Tradition began circa 8,500 years ago and extended essentially unchanged until circa 1,500 years ago (Warren 1968:2; Warren et al. 2008). Also, during the Archaic Period in the coastal region, beginning somewhere north of San Diego and extending to Santa Barbara, a fourth cultural assemblage, variously described as the Intermediate Horizon (Wallace 1955) or Campbell Tradition (Warren 1968), has been delineated and distinguished, following the Milling Stone Horizon/Encinitas Tradition. This assemblage is distinguished from earlier Archaic assemblages by the presence of large projectile points and milling tools such as the mortar and pestle. The time period of this assemblage is viewed as beginning circa 4,800 years ago and continuing to as late as 1,300 years ago (Warren 1968). While still a matter of some debate, in the southernmost coastal region, Warren and others (2008) have subsequently divided the Archaic Period into a Middle Archaic Period and the time period encompassing the extent of the Intermediate/ Campbell cultural assemblage, termed the Final Archaic Period.

In the vicinity of the study area, archaeological investigations conducted at several sites in Perris Valley for the Perris Reservoir project, approximately nine miles to the northwest of the project area, produced a single radiocarbon date within the Archaic Period of circa 2,200 years before present (BP), as well as a

few diagnostic artifacts, as the only evidence for a late Archaic Period occupation at the sites (Bettinger 1974:159-162). Investigations at another site, CA-RIV-1806, in the mountains northwest of Temecula, also produced a radiocarbon date for the late Archaic Period of circa 2775 BP (McCarthy 1986:73). More recently, large-scale archaeological investigations have been conducted for the Eastside Reservoir (since renamed as Diamond Valley Lake) Project, located approximately one mile east of the study area. This project involved reservoir construction within the adjacent Domenigoni and Diamond valleys (Goldberg 2001; Robinson 2001). Based on the results from this project, the researchers developed a local chronology specific to the Domenigoni and Diamond valleys based on projectile point style changes and associated radiocarbon dates (Robinson 2001). The terminology in this chronology resembles that already presented above, with the period from 9,500 to 7,000 years ago designated as the Early Archaic period, the period from 7,000 to 4,000 years ago as the Middle Archaic, and the period from 4,000 to 1,500 years ago as the Late Archaic. Only two components could be firmly dated to the Early Archaic at the reservoir sites, but sparse evidence of Early Archaic activity was noted in six other localities. One site did, however, produce two radiocarbon dates of 9190±50 and 9310±60 BP (McDougall 2001). For the Middle Archaic, firm evidence was documented in 14 locations, with traces at four other sites. During the Late Archaic, a profusion of activity and occupation was evident, with 23 firmly dated site components and sparse evidence at eight other localities (Goldberg 2001:524).

Two other archaeological investigations conducted in relative proximity to the study area have also produced evidence for precontact occupation in the area during the earliest part of the Archaic Period. One investigation occurred at Lake Elsinore, located approximately 12 miles to the west of the study area (Grenda 1997). This natural lake is situated in a fault-created basin whose principal source of water in precontact times was the San Jacinto River (Grenda 1997:3). Archaeological investigations conducted at a site located along the old lake shoreline indicated occupation as early as 8,500 years ago (Grenda 1997). The other archaeological investigation was conducted in the San Jacinto Valley at site CA-RIV-6069 approximately 17 miles to the north of the study area. This investigation produced an early Archaic Period assemblage and occupation as early as 9,400 years ago (Horne and McDougall 2008:91). Thus, precontact occupation during the Archaic Period in areas of western Riverside County in the study area vicinity is documented to have occurred, beginning possibly as early as 9,400 years ago, and remained present to the end of the period, approximately 1,500 years ago. While this temporal extent correlates with Warren's original proposed extent of the Encinitas Tradition, refinement of his characterization of the Tradition as being a relatively stable, sedentary, predominantly gathering complex, possibly associated with one people, and with an extent mostly restricted to the San Diego County area, may now, based on more recent information available, be subject to some revision (cf. Sutton and Gardner 2010).

2.2.1.4 Late Prehistoric Period

The beginning of the Late Prehistoric Period, circa 1,500 years ago, is seen as a time marked by a number of rather abrupt changes. The magnitude of these changes and the short period of time within which they took place are reflected in significant alteration of previous subsistence practices and the adoption of significant new technologies. As discussed further below, some of this change may have been as a result of significant variations in climatic conditions. Subsistence and technological changes that occurred include a shift from hunting using atlatl and dart to the bow and arrow; a de-emphasizing of shellfish gathering along some areas of the coast (possibly due to silting-in of the coastal lagoons); and an increase in the storage of crops, such as acorns and pinyon nuts. Other new traits introduced during the Late Prehistoric Period include the production of pottery and cremation of the dead, and, locally, in the western Riverside County area, a shift in settlement pattern is apparent (cf. Wilke 1974).

This shift in settlement is first noted during the early part of the period from 1,500 to 750 years ago and is evidenced locally in the results from the Eastside Reservoir (Diamond Valley Lake) Project by a rather sudden decline in occupation in the local area during the initial part of the period. This 750-year period was termed by the Eastside Reservoir researchers as the Saratoga Springs Period, following Warren's (1984) desert terminology. This period can also be seen to partially coincide with a warm and arid period known as the Medieval Warm Period, documented to have occurred between approximately 1,100 and 600 years ago (Jones et al. 1999; Kennett and Kennett 2000; Stine 1994). During this period, at least two episodes of severe drought have also been demonstrated, the first between 1060 and 840 calibrated (cal) BP and the second between 740 and 650 cal BP (Goldberg 2001; Stine 1994). While sites dating to this period are not absent in western Riverside County (e.g., Keller and McCarthy 1989; McCarthy 1987:34), Goldberg (2001) hypothesized that the Medieval Warm Period could account for the decline in sites occurring in the Eastside Reservoir Project area during the Saratoga Springs Period (1500 to 750 BP), claiming that desert and inland areas of western Riverside County, such as where the Eastside Reservoir Project and the current study area are located, would no longer be suitable to support residential bases. Goldberg (2001) further hypothesized that settlements would possibly be clustered at more suitable water sources during this time, such as at the coast, Lake Cahuilla, or Lake Elsinore (cf. Wilke 1974, 1978). While a decline was noted during the initial part of the Saratoga Springs Period, subsequently, during the latter part of the period, during the time of the Medieval Warm Period, a reoccupation began to occur (Goldberg 2001:578). According to Goldberg, "When components dating to the Medieval Warm segment of the Saratoga Springs Period are segregated and combined with Medieval Warm components from the Late Prehistoric Period, it shows that the frequency of refuse deposits and artifact and toolstone caches during the Medieval Warm is slightly higher than during the Late Archaic and much higher than during the later portion of the Late Prehistoric Period" (2001:578).

In the Eastside Reservoir [Diamond Valley Lake] Project, the Late Prehistoric Period was defined as extending from the end of the Saratoga Springs Period (750 BP) to 410 BP. A subsequent Protohistoric Period was also defined as extending from 410 to 150 BP. The Late Prehistoric (750–410 BP) was characterized by the presence of Cottonwood points, although research indicated that Cottonwood points had actually begun to appear in the Eastside Reservoir Project study area as early as 950 BP. Ceramics and abundant obsidian began to appear around the time of the Cabrillo exploration in A.D. 1542; so, this date (i.e., circa 410 BP), until the establishment of the mission system in the late 1700s, was defined as the Protohistoric Period (Robinson 2001). It should also be noted that the end of the Saratoga Springs Period and the beginning of the Late Prehistoric Period, 750 BP, also coincides with the onset of the Little Ice Age, generally dated from 750 to 150 BP (Goldberg 2001; Sutton et al. 2007). During this period, the climate was cooler and moister, and the sites identified within the Eastside Reservoir Project study area reflected a substantial increase in number and diversity, longer occupation periods, and more sedentary land use. Similar intensification of land use also occurred during this time in neighboring San Gorgonio Pass (Bean et al. 1991) and Perris Valley (Wilke 1974).

Differing from the terminology used in the Eastside Reservoir study, the Late Prehistoric Period has been more commonly described archaeologically in northern San Diego County and the western portion of Riverside County as the San Luis Rey (SLR) complex. As originally defined by Meighan (1954), the SLR complex is associated with the ethnographic Luiseño people, who were present in the area at the time of first contact with Europeans. Meighan saw the complex as occurring in two phases: SLR I and SLR II, with the principal archaeological element distinguishing the two phases being the absence of pottery in SLR I sites and its presence in SLR II assemblages. The introduction of pottery was seen as having disseminated to the precontact Luiseño from their neighbors, the Kumeyaay, to the south (Rogers 1936; Meighan 1954:221). Elements of the SLR I phase include small, triangular, pressure-flaked projectile

points (generally Cottonwood series, with Desert Side-notched series points rarely occurring); milling implements: mortars and pestles, manos and metates, and bedrock milling features; bone awls; Olivella shell beads; other stone and shell ornaments; and cremations (Meighan 1954; Moratto 1984; Pigniolo 2001; True et al. 1974). In addition to pottery, the later SLR II assemblages include several other elements not found in SLR I assemblages: "cremation urns, red and black pictographs, and such nonaboriginal items as metal knives and glass beads" (Meighan 1954:223). SLR I was originally thought by Meighan to date from A.D. 1400 to A.D. 1750, with SLR II dating between A.D. 1750 and A.D. 1850 (Meighan 1954:223). This chronology was subsequently revised, however, by True and others, who suggested that, while "some pottery probably filtered across from Diegueño [Kumeyaay] territory perhaps as early as A.D. 1200-1300 under some circumstances, … the introduction of pottery as a regular and important element in the San Luis Rey lifeway probably did not take place until a century or two before the arrival of the Spanish (perhaps A.D. 1500-1600)" (True et al. 1974:97).

2.2.2 Ethnohistory

While ethnographers do not entirely agree on the extent of traditional tribal territories in the area, the project location is generally considered to lie within the traditional territory of the Luiseño people. The name Luiseño derives from Mission San Luis Rey de Francia and has been used to refer to the Native people associated with the mission. A number of ethnographic and ethnohistoric studies of the Luiseño have occurred, including Bean and Shipek (1978), Boscana (1947), DuBois (1908), Jones (1992), Kroeber (1925), Masiel-Zamora (2013), Oxendine (1983), Shipek (1977), Sparkman (1908), Talley (1982), and White (1963). Some ethnographers place the area of the project within or adjacent to a "transitional" area between the Luiseño and the linguistically related Cahuilla to the east (Bean 1972, 1978; Bean and Shipek 1978), but Kroeber (1925) places it firmly within the traditional territory of the Luiseño people (see Kroeber 1925: Plate 57). The Luiseño and Cahuilla are both Takic-speaking people of the Uto-Aztecan linguistic stock (Miller 1986). The Luiseño language belongs to the Cupan group of the Takic subfamily and is part of the widespread Uto-Aztecan language family (Bean and Shipek 1978; Sparkman 1908; White 1963). The Cahuilla and another neighbor to the east, the Cupeño, also speak Cupan languages. The ethnographic uncertainty of the boundary between the Luiseño and the Cahuilla likely indicates that it has varied through time. In relative proximity to the project area, in the northern portion of San Diego County, Luiseño territory is bordered by the linguistically distinct Hokan-based, Yuman-speaking, Kumeyaay, also known as Ipai-Tipai, or Diegueño (named for Mission San Diego de Alcalá).

The Luiseño followed a seasonal gathering cycle, with bands occupying a series of temporary habitations or campsites within their territory (Bean and Shipek 1978; White 1963). The Luiseño lived in semi-sedentary villages usually located along major drainages, in valley bottoms, and also on the coastal strand, with each family controlling gathering areas (Bean and Shipek 1978; Sparkman 1908; White 1963). True (1990) indicated that the predominant determining factor for placement of villages and campsites was locations where water was readily available, preferably on a year-round basis. While most of the major Luiseño villages known ethnographically were located closer to the coast along the Santa Margarita River Valley and the San Luis Rey River Valley (Bean and Shipek 1978; Kroeber 1925; White 1963), Kroeber (1925) does indicate general locations for three Luiseño villages in more inland areas. He places the village of *Panache* in proximity to Lake Elsinore and the confluence of the San Jacinto River and Temescal Creek, approximately 12 miles to the west of the project, and the villages of *Temeku* and *Meha* in the vicinity of the confluence of the upper Santa Margarita River and Temecula Creek, approximately seven miles to the southwest of the project area (Kroeber 1925: Plate 57; McCown 1955:1). Kroeber also indicates another Luiseño village, *Sovovo* (*Soboba*, *Sovovatum*), located in close

proximity to the project area, to the southeast, along the upper San Jacinto River (Kroeber 1925: Plate 57).

As previously noted, interpretations by ethnographers and linguistic anthropologists may differ from the traditional knowledge of the Luiseño people. Traditional stories and songs of the Native people also describe the extent of traditional use areas. Luiseño creation stories indicates that the Luiseño people have always been here, not migrating from elsewhere. The creation story of the Pechanga Band tells that the world was created at Temecula. "The *Káamalam* [first people] moved to a place called *Nachíivo Pomíisavo*, but it was too small, so they moved to a place called '*exva Teméeku,*' this place you now known as Temeku. Here they settled while everything was still in darkness (DuBois 1908)" (Masiel-Zamora 2013:2). The website of the Soboba Band of Luiseño Indians states, "Since time immemorial the descendants of the Soboba people are those whom [sic] have lived on and occupied the land that is presently known as the cities of San Jacinto, Hemet, Valle Vista and Winchester" (Soboba Band of Luiseño Indians n.d.). A traditional Luiseño story tells of a great flood, and the people went to higher ground, where they were saved. The San Luis Rey Band of Mission Indians tell that this higher ground where the people were saved is Morro Hill on northern San Diego County. Some Luiseño informants indicated the place in this story is a hill just east of Highway 395 in the San Luis Rey River Valley (Cupples and Hedges 1977).

Prehistorically, the Cahuilla territory was topographically diverse, occupying elevations from 11,000 feet in the San Bernardino and San Jacinto mountains to below sea level at the Salton Sea (Bean 1978). The Cahuilla term *?ivi?lyu?atum* (or *īvīatim*) refers to those who speak the Cahuilla language and is also a recognition of a commonly shared cultural tradition (Bean 1972; Strong 1929). The Cahuilla are thought to have been in part distinguished from other Uto-Aztecan-speaking groups (the Luiseño, Serrano, and Gabrielino) by mountain ranges and plains, but they are known to have interacted regularly with these and other groups through trade, intermarriage, ritual, and war. Cahuilla villages were commonly situated within canyons extending into mountain ranges or on nearby alluvial fans, typically near sources of water and food (Bean 1978; Bean et al. 1991). The diverse habitat of the Cahuilla people enabled a wide variety of plant and animal species to be used for food, goods manufacture, and medicine (Bean 1978).

2.2.3 Historical Background

2.2.3.1 Spanish Period

While Juan Rodríguez Cabrillo visited San Diego briefly in 1542, the beginning of the historic period in the San Diego/Riverside area is generally given as 1769. In the mid-eighteenth century, Spain had escalated its involvement in California from exploration to colonization (Weber 1992) and, in that year, a Spanish expedition headed by Gaspar de Portolá and Junípero Serra established the Royal Presidio of San Diego. Portolá then traveled north from San Diego seeking suitable locations to establish military presidios and religious missions in order to extend the Spanish Empire into Alta California.

The first documented Spanish contact in what is now Riverside County was by Spanish military captain Juan Bautista de Anza who led expeditions in 1774 and 1775 from Sonora to Monterey (Bolton 1930). Anza embarked on the initial expedition to explore a land route northward through California from Sonora, with the second expedition bringing settlers across the land route to strengthen the colonization of San Francisco (Rolle 1963). Anza's route led from the San Jacinto Mountains northwest through the San Jacinto Valley, which was named "San José" by Anza. Little documentation exists of

Anza's route being used after the two expeditions, although it was likely used to bring Spanish supplies into the newly colonized Alta California (Lech 2004). In 1781, the Spanish government closed the route, due to uprisings by the Yuman Indians. However, by that time, the missions were established and self-sufficient; thus, the need for Spanish supplies from Sonora had begun to diminish.

Although Riverside County proved to be too far inland to include any missions within its limits, Missions San Juan Capistrano and San Luis Rey de Francia, established in 1776 and 1798 respectively, claimed a large part of southwestern Riverside County. Due to the inland geographical location of the Cahuilla territory, the Spanish missions did not have as direct an effect on them as they did on the Luiseño people who lived along the coast (Bean 1978). On the coast, the Luiseño were moved into the Mission environment, where living conditions and diseases promoted the decline of the Luiseño population (Bean and Shipek 1978). However, throughout the Spanish Period, the influence of the Spanish progressively spread further from the coast and into the inland areas of southern California as Missions San Luis Rey and San Gabriel extended their influence into the surrounding regions and used the lands for grazing cattle and other animals.

In the 1810s, ranchos and mission outposts called *asistencias* were established, increasing the amount of Spanish contact in the region. An *asistencia* was established in Pala in 1818 and in San Bernardino in 1819. Additionally, Rancho San Jacinto was established for cattle grazing in the San Jacinto Valley (Bean and Vane 1980; Brigandi 1999). In 1820, Father Payeras, a senior mission official, promoted the idea that the San Bernardino and Pala *asistencias* be developed into full missions in order to establish an inland mission system (Lech 2004). However, Mexico won its independence from Spain in 1821, bringing an end to the Spanish Period in California.

2.2.3.2 Mexican Period

Although Mexico gained its independence from Spain in 1821, Spanish patterns of culture and influence remained for a time. The missions continued to operate as they had in the past, and laws governing the distribution of land were also retained in the 1820s. Following secularization of the missions in 1834, large ranchos were granted to prominent and well-connected individuals, ushering in the Rancho Era, with the society making a transition from one dominated by the church and the military to a more civilian population, with people living on ranchos or in pueblos. With the numerous new ranchos in private hands, cattle ranching expanded and prevailed over agricultural activities.

In order to obtain a rancho, an applicant submitted a petition containing personal information and a land description and map (*diseño*). In 1835, José Antonio Estudillo of San Diego submitted a petition for the San Jacinto Rancho, located to the north and east of the project alignment. Although Estudillo's petition was for four square leagues (approximately 30,000 acres), in 1842 he was granted close to the maximum size allowed of 11 square leagues (Lech 2004; State Lands Commission 1982). In 1845, Estudillo's son-in-law, Miguel de Pedrorena filed a petition for half of the San Jacinto Viejo Rancho and a small additional portion of land two miles to the northeast in the hills east of Lamb Canyon (Lech 2004). This portion, the northern half of the San Jacinto Viejo Rancho, became known as the San Jacinto Nuevo y Potrero Rancho.

Around this same time, Governor Manuel Micheltorena granted Rancho Temecula, located southwest of the project, to Felix Valdez, a Mexican army officer (Hoffman 1862). This rancho was later sold to Frenchman Jean-Louis Vignes, who sought to grow grapes in the area. Vincente Moraga and Luis Arenas were granted the 26,568-acre Pauba Rancho located east of Rancho Temecula and south of the project

alignment (Hoffman 1862). In 1848, Jean-Louis Vignes purchased Rancho Pauba and merged it with Rancho Temecula.

Following the secularization of the missions in 1834, the political instability led to Indian revolts and uprisings against the Mexican rancheros who, not uncommonly, treated Indians as serfs. Many Indians left the missions and ranchos and sought refuge among inland inhabitants. Some Luiseño people even acquired land grants and eventually entered into mainstream Mexican culture (Bean and Shipek 1978). During the Mexican period, the Cahuilla people were likewise increasingly influenced by Mexican culture. Some of the Cahuilla acquired Spanish names, learned Spanish, and adopted forms of Spanish subsistence, such as raising cattle, agriculture, and wage labor (Bean 1978; Ward 1967). Many Cahuilla worked seasonally for the Mexicans, traveling to and from their villages (Bean 1978).

2.2.3.3 American Period

American governance began in 1848, when Mexico signed the Treaty of Guadalupe Hidalgo, ceding California to the United States at the conclusion of the Mexican–American War.

California's acquisition by the United States substantially increased the growth of the population in California. The California gold rush, the end of the Civil War, and the passage of the Homestead Act implementing the United States' perceived "manifest destiny" to occupy and exploit the North American continent brought many people to California after 1848. While the American system required that the newly acquired land be surveyed prior to settlement, the Treaty of Guadalupe Hidalgo bound the United States to honor the land claims of Mexican citizens who were granted ownership of ranchos by the Mexican government (Lech 2004). The Land Act of 1851 established a board of commissioners to review land grant claims, and land patents for the land grants were issued from 1876 to 1893. The San Jacinto Nuevo y Potrero Rancho land grant was patented in 1883 to Miguel Pedrorena, Maria Antonia Estudillo Pedrorena, Isabel Pedrorena, and Helena Pedrorena. Both the Pauba and Temecula land grants were patented in 1860 to Jean-Louis Vignes, despite the efforts of squatters David Kline and William Moody, who started a ranch in the Temecula Rancho in an attempt to claim the land as their own (Lech 2012).

Initially, southern California was divided into only two counties: Los Angeles and San Diego. In 1853, San Bernardino County was added. Riverside County was formed in 1893 from a small portion of San Bernardino County and a larger part of San Diego County.

Southern California was developed by Americans and other immigrants who migrated to the western frontier in pursuit of gold and other mining, agriculture, trade, and land speculation (Lech 2004). During the latter part of the nineteenth century "boom and bust" cycles brought thousands of people into southern California. While many eventually left, some remained to later form the foundations of small communities based on farming, orchards, dairies, and livestock ranching. The population growth of southern California during these early years of the American Period brought a need for mail and freight travel. In 1857, John Butterfield was awarded a six-year contract to transport mail twice a week between St. Louis, Missouri, and San Francisco, California (Helmich 2008). The Butterfield Stage Route used the same trail as the Sonora (or Southern Emigrant) Trail from Yuma through Warner Springs and Temecula, and then up through Temescal Valley to Chino, and then to Los Angeles. By the mid-nineteenth century, the Southern Emigrant Trail ran through western Riverside County in a similar alignment to the current I-15 freeway. The Butterfield Overland Stage route went through the ranch that Kline and Moody created, now called "Alamos," the Spanish word for cottonwoods, in Murrieta.

Another branch of the Southern Emigrant Trail veered northward from Temecula to Box Springs near present-day Moreno Valley, roughly following the present-day route of I-215 (Lech 2004).

Local mail routes within southern California were also developed beginning in the 1850s, such as the line begun in 1852 by Phineas Banning between Los Angeles and San Diego (Stott 1968). In 1868, Tomlinson & Co. briefly operated a daily mail route from Tucson, Arizona to Los Angeles via San Diego and San Bernardino (Stott 1968), although after only four months the company had lost $12,000 and discontinued service (Mills 1957). In 1867, the U.S. Mail Company sent weekly stages that ran between San Diego and San Bernardino.

The community of Winchester, named for Mrs. Amy Winchester, the widow of Horace Winchester, was founded in 1886. The mail route passed through Winchester, and the town's first post office opened in 1887 (Frickstad 1955). The next year, a post office opened in the small mining town of Leon within the French Valley, located near the center of the project alignment. The French Valley, so named because of the large number of French grain farmers and sheepherders in the area, became a farming and ranching hub (Hunneman 2008).

While stagecoaches were successful at transporting gold, people, and mail, the need for a railroad to California was imperative. In the 1850s, surveys were initiated by the federal government to determine a railroad route to the Pacific coast (Lech 2004). Although the first transcontinental railroad was completed in 1869 to northern California, in the 1870s, the Southern Pacific Railroad Company, incorporated in 1865 and consolidated in 1870, began to construct a southern route that would traverse the state (Fickewirth 1992). In the early 1880s, the California Southern Railway, a subsidiary of the Atchison, Topeka and Santa Fe Railway (Santa Fe), was completed and allowed for travel through the Cajon Pass to Barstow to a junction of the Atlantic and Pacific Railroad and down to San Diego through western Riverside County. In 1887, Santa Fe officials consolidated their family of railroads in southern California, forming the California Central Railway. Although the California Southern remained an individual subsidiary at that time, it consolidated with the California Central Railway and the Redondo Beach Railway two years later, in 1889. The resulting corporation was the Southern California Railway Company, wholly owned by Santa Fe (Price 1988). In 1906, all of lines of the Southern California Railway Company were deeded to the Atchison, Topeka and Santa Fe Railway Company.

In 1885, a group of local investors and residents approached the California Southern Railroad to abandon its Pinacante station in exchange for several town lots, a well to supply steam trains, and a depot. In return, the railroad would designate the new town as an official stop along the route from San Diego to San Bernardino. Fred Perris worked with the developers to survey the land and they named the town (Perris) after him, with the City of Perris incorporating later, in 1911.

By 1880, Henry Hewitt had bought approximately 8,000 acres of land in the San Jacinto Valley and was running a store and a hotel. In the early 1880s, the San Jacinto Land Association bought more than 10,000 acres of land and developed the town of New San Jacinto, which grew rapidly and, by 1886, had 250 residents, 150 houses, two hotels, a brickyard, lumberyards, a blacksmith, and a newspaper (Lech 2004). By 1887, the Estudillo Land and Water Company had been incorporated in order to subdivide and market the last remaining 1,100 acres of the Estudillo land grant. The Estudillo Land and Water Company offered the San Jacinto Valley Railway, purchased by the California Central Railway that same year, 27 acres of land for a railroad right-of-way and depot. As such, the railroad to the San Jacinto Valley ended on the Estudillo tract approximately 0.5 mile west of San Jacinto (Lech 2004).

With the completion of the California Southern Railway, settlers flocked to the Perris and San Jacinto valleys in even greater numbers. By the early 1890s, San Jacinto had a population of 1,500, three hotels, 24 stores, a bank, and was a thriving civic center for the region (Lech 2004). When Riverside County was formed in the early 1890s, San Jacinto boasted that it exported more than it imported and that it was the second largest city in "size and importance" in the newly formed county (Bynon 1893).

The project area and surrounding region developed along with the railroad. The trains were used to transport settlers into the area, creating a period of agricultural and land development, ultimately resulting in the establishment of Riverside County in 1893, formed from portions of San Bernardino and San Diego counties. Although the railroad had been the impetus for founding the town, agriculture was also important to the future development of the area. Within the San Jacinto Valley, farms stretched for a 20-mile area, and farm products ranging from hay to fruits were brought to San Jacinto for shipment on the railroad (Lech 2004).

Along with much of southern California, the San Jacinto and Perris valleys were plagued by water scarcity in the late nineteenth and early twentieth centuries (Bean and Vane 1980). In 1922, California reached an agreement with the other states in the Colorado River watershed basin allowing the allotment of water needed to construct the Colorado River Aqueduct, which runs through the San Jacinto Valley directly north of the project area (Gruen 1998). The construction of the Colorado River Aqueduct by Metropolitan occurred along various points simultaneously between 1934 and 1941, helping to fuel a torpid economy in the midst of the Great Depression. This massive undertaking allowed the Metropolitan Water District to employ up to 10,500 people at any given time, with a total employment of 35,648 over an eight-year period, making it southern California's single-largest work opportunity during the Great Depression (Gruen 1998). At its completion, the Colorado River Aqueduct was a huge American engineering achievement stretching for 242 miles.

The San Diego Aqueduct, which runs parallel to and within the project alignment, was built in the 1940s as a response to the looming water crisis brought on by the explosive population growth of the San Diego area during World War II (Autobee n.d.). A 1944 Bureau of Reclamation report determined that San Diego's water supply would be depleted by July 1947. This alarming revelation prompted the Bureau to begin construction on the Aqueduct in 1945; two years later, in 1947, the aqueduct's first pipeline, which runs from the Colorado River Aqueduct near San Jacinto to San Diego's San Vicente Reservoir, was completed. In the 1950s, due to an increase in population combined with below-average rainfall, a second pipeline was built paralleling the first. This second pipeline was completed in 1954 (Autobee n.d.). In the 1950s, the Metropolitan Water District, in conjunction with the San Diego County Water Authority, constructed the Second San Diego Aqueduct, running from the Colorado River Aqueduct near Hemet to San Diego's Lower Otay Reservoir.

Due to construction of the Colorado River and San Diego Aqueducts and other efforts to bring water to the region by the Eastern Municipal Water District in the 1950s, agriculture in the area shifted from dry farming crops to a more diverse collection of crops; irrigation allowed alfalfa, the King potato, and sugar beets to be grown in the Perris valley (City of Perris n.d.). The State Water Project was approved by the California Legislature in 1951, with construction beginning in 1957; the terminus of this approximately 600-mile long water delivery and storage system is Lake Perris, which was constructed in the latter part of the 1960s and early 1970s. In addition to being an important water resource, Lake Perris afforded the area with recreational activities.

As mentioned above, the French Valley maintained its focus on agriculture through the 1960s, when the Metropolitan Water District of Southern California purchased more than 6,000 acres of land to construct the Skinner Reservoir (Hunneman 2008). Named for Robert A. Skinner, the general manager of the Metropolitan Water District from 1962 to 1967, the reservoir was formed by the construction of a dam on Tucalota Creek south of Bachelor Mountain. The reservoir was finished in the mid to late 1970s, submerging the ranches on the land in the new lake (Hunneman 2008). The following decades saw more development in the region; in the late-1980s, the French Valley Airport was constructed, and the Southwest Justice Center opened in the early 1990s.

3.0 ARCHIVAL RESEARCH AND NATIVE AMERICAN CONTACT PROGRAM

3.1 RECORDS SEARCH

HELIX staff obtained a records search of the California Historical Resources Information System (CHRIS) from the Eastern Information Center (EIC) on May 5, 2022. The records search covered the project APE, as currently proposed, as well as an alternative alignment (see Section 6.0, *Project Alternative*), and a half-mile buffer on either side of the alignments and included a review of archaeological and historical resource data, locations and citations for previous cultural resources studies, and a review of the State Office of Historic Preservation's (OHP's) historic properties directory. HELIX conducted an updated records search on June 18, 2025, at the South Coastal Information Center (SCIC); the SCIC has replaced the EIC as the CHRIS repository for Riverside County. The updated records search also included a half-mile buffer on either side of the APE, as well as the alternative alignment and a half-mile buffer on either side of it. Records search summaries and maps are included as Appendix B (Confidential Appendices, bound separately). This section addresses the records search data for the project APE; records search data for the alternative alignment is addressed in Section 6.0.

3.1.1 Previous Studies

The records search identified over 150 previous cultural resource studies within the half-mile-buffer records search limits. The majority of the reports on file at EIC and SCIC within the records search limits were reports of surveys or assessments, with the remainder including reports from literature searches, site evaluations, site data recovery programs, cultural resources monitoring, resource evaluations, and management planning documents.

3.1.2 Previously Recorded Resources

The SCIC has a record of 157 previously recorded cultural resources within a half-mile of the project APE, though only 10 of these are crossed by or situated within the APE itself; these are discussed below (Table 1, *Previously Recorded Resources Within the Project APE*). The resources within the project APE consist of six bedrock milling sites, three historic-era roads, and the historic-aged San Diego Aqueduct, as summarized in Table 1 and described below.

The other 147 cultural resources recorded within a half-mile of the APE include historic-era resources (farmsteads, ranches, houses, roads, canals, railroads, archaeological deposits), and precontact resources, including habitation sites, bedrock milling concentrations, isolated bedrock milling features

with no associated artifacts, lithic scatters, and a variety of other site types. A large historic/archaeological district has been identified near the northern portion of the project but outside the APE: P-33-014370 (CA-RIV-14370), which includes over 130 resources of both precontact and historic age. Precontact sites recorded within the district contain bedrock milling features, lithic scatters, petroglyphs, cairns, burials, hearths, rock shelters, and habitation debris. The historic/archaeological district has been identified by Pechanga as a TCP/TCR. Some of the 147 cultural resources within the records search buffer but outside the APE are within the archaeological district/TCP.

Table 1
PREVIOUSLY RECORDED RESOURCES WITHIN THE PROJECT APE

Resource Number (P-33-)	Resource Number (CA-RIV-)	Age and Resources Present	Description	Recorder, Date
002970	2970	Precontact site	Several bedrock milling features spread out in two loci; later merged with P-33-003839.	Cody, 1984; Ashkar and Hilton, 1999
003839	3839	Precontact site	Several bedrock milling features; later merged with P-33-002970.	Drover and Smith, 1990; Ashkar and Hilton, 1999; Brunzell, 2003
011037	6648	Precontact site	Three bedrock milling features with no artifacts observed and no evidence of subsurface deposits; site noted as in good condition.	Dice, 2001; Hoover, 2002; Hoover, 2005
011038	6649	Precontact site	Several bedrock milling features with one artifact observed on the surface and no cultural material recovered in shovel test pits and excavation units.	Dice, 2001; Hoover, 2002; Ballester and Melzer, 2005; Hoover 2005; Smallwood, 2005
013871	11964	Historic structure	Winchester Road, used as early as the late 1880s; the current alignment has been in use since 1949.	Goodwin, 2003; Cooley, 2007; Bursan, 2008; AECOM 2012; Smallwood, 2013; Roy, 2013
015734	8195	Historic structure	San Diego Aqueduct and Canal, with segments built in 1947, 1951, 1958, and 1959.	Easter and Beedle, 2005; Craft, 2007
017222	---	Precontact site	A single bedrock milling feature.	Keller, 1988
017223	---	Precontact site	A single bedrock milling feature with no associated artifacts.	Keller, 1988
020551	---	Historic structure	Simpson Road, in use since at least the 1890s; segment within APE assessed as not a significant resource.	Stanton, 2011; Smallwood, 2014
020732	10654	Historic structure	Segment of Leon Road north of Winchester Road.	Kremkau, 2011; Roy, 2013

3.2 DESCRIPTIONS OF PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN THE PROJECT APE

3.2.1 P-33-002970 (CA-RIV-2970)

First recorded in 1984 by SRS, Inc., P-33-002970 (CA-RIV-2970) was initially recorded as two loci of bedrock milling features, one with three features and the other with two (Cody 1984). In 1999, Jones & Stokes visited the mapped location of the resource and noted that the conditions at the time reflected those in 1984. It was also noted at this time that the distance between this resource and P-33-003839 (CA-RIV-3839), a bedrock milling site just southeast of P-33-002970 (CA-RIV-2970), was comparable to the distance between features within one of the sites (Ashkar and Hilton 1999a). As such, the two resources were recommended to be merged into a single site.

3.2.2 P-33-003839 (CA-RIV-3839)

P-33-003839 (CA-RIV-3839) was initially recorded as a possible habitation site with bedrock milling (Drover and Smith 1990). The site was noted to contain a total of 15 slicks, two mortars, a possible rock shelter, and five pieces of quartzite debitage. In 1999, Jones & Stokes visited the mapped location of the resource and noted that the conditions at the time reflected those in 1990. As described above, it was noted at that time that P-33-003839 (CA-RIV-3839) and P-33-002970 (CA-RIV-2970) should be recorded as a single site (Ashkar and Hilton 1999b). McKenna et al. surveyed the resource in 2003; through a combination of field surveys and archival research, McKenna et al. concluded that the first recordations for P-33-002970 (CA-RIV-2970) and P-33-003839 (CA-RIV-3839) were actually the same site. That is, the features noted in the recordation for the southerly loci of P-33-002970 (CA-RIV-2970) were also recorded as new features when P-33-003839 (CA-RIV-3839) was first recorded (Brunzell 2003). The site record noted, “Although no surface scatter has been observed, dense vegetation and erosion, covering portions of existing features, suggest that the data potential of CA-RIV-3839 is far from exhausted.”

3.2.3 P-33-011037 (CA-RIV-6648)

This site was originally recorded as two bedrock milling features, comprised of one mortar and one milling slick, with no artifacts observed and no evidence of subsurface deposits (Dice 2001a). In 2002, a third milling feature was observed within the site boundary; it consisted of a single mortar (Hoover 2002a). The site was described as being on a knoll. A 2005 site record update noted, “The property surrounding this site has been developed into residential housing. The site was not disturbed during grading” (Hoover 2005).

3.2.4 P-33-011038 (CA-RIV-6649)

This resource was originally recorded as two bedrock milling features, each consisting of a single shallow, saucer-shaped mortar on coarse granitic bedrock (Dice 2001b). A third feature, consisting of a large milling slick, was recorded in 2002 (Hoover 2002b). Three additional features were noted in 2005, each containing one to three slicks; however, Feature 3 could not be reidentified at that time (Ballester and Melzer 2005). No artifacts were observed, and there was no evidence of subsurface deposits. A testing program was conducted at P-33-011038 (CA-RIV-6649) in 2006, consisting of a resurvey of the site and excavation of eight shovel test pits (STPs) and two test units. The testing program recovered a single flake “lying within a crack between two boulders near Features 4 and 5” (Smallwood 2006). The 2006 site record noted, “The results of the testing and evaluation program suggest that Site CA-RIV-6649

does not meet the criteria for listing in the National Register of Historic Places or the California Register of Historical Resources." Based on this, the site does not meet the criteria for significance under CEQA or the NHPA.

3.2.5 P-33-013871 (CA-RIV-11964H)

P-33-013871 (CA-RIV-11964H) is a segment of Winchester Road (SR 79), originally signed as Washington Street, constructed and used as early as the late 1880s (Bursan 2008). The road was first recorded in 2002, with subsequent updates in 2003, 2007, 2008, 2012, and 2013. Winchester Road was the only major route between Winchester and the Murrieta Hot Springs until the 1940s; the road was straightened and realigned around 1949 and renamed Winchester Road in 1959 (Bursan 2008). Several abandoned sections of the road have been documented; each of these is in poor condition, and they have been recommended not eligible for the CRHR or NRHP (AECOM 2012; Roy 2013a). The extant portion of the road was also recommended as not eligible for the CRHR or NRHP due to modifications that have occurred since its initial construction (Bursan 2008). The project alignment crosses P-33-013871 (CA-RIV-11964H) at several locations.

3.2.6 P-33-015734 (CA-RIV-8195)

P-33-015734 (CA-RIV-8195) is the San Diego Aqueduct and Canal, built in in the 1940s and 1950s. The Aqueduct and Canal were built in the mid-twentieth century to bring water from the Colorado River Aqueduct to San Diego County and consist of two separate conveyance features: the First San Diego Aqueduct, built in 1947 and 1951, consists of two precast concrete pipes and travels from the Colorado River Aqueduct near San Jacinto to San Diego's San Vicente Reservoir; the Second San Diego Aqueduct, built in 1958 and 1959, consists of an underground pipeline and an above-ground canal, and runs from the Colorado River Aqueduct near Hemet to San Diego's Lower Otay Reservoir (Easter and Beedle 2005).

Segments of the aqueducts and canal were recorded by Applied Earthworks in 2005 and updated in 2007 by Jones & Stokes in conjunction with undertakings proposed by other applicants at that time. At the time of the 2005 recordation, Applied Earthworks indicated that both the First and Second Aqueducts are eligible under Criterion A/1 of the NRHP and CRHR due to their significance as a driving and enabling force in the economic development of San Diego (Easter and Beedle 2005). Separately, the First San Diego Aqueduct was evaluated as eligible for listing in the NRHP under Criterion A, for local significance as the first water infrastructure project that provided a permanent, reliable supply of freshwater to San Diego (Cook et al. 2012). The period of significance for this resource is 1945, which marks the commencement of construction of the First San Diego Aqueduct, to 1960, which marks the completion of construction on the Second San Diego Aqueduct. The Aqueduct was evaluated as not eligible under criteria B, C, and D of the NRHP (Cook et al. 2012). The project APE runs parallel to the First San Diego Aqueduct as the APE runs through Patterson Ave and overlaps with the aqueduct as it passes through the Domenigoni Valley and Leon Road.

3.2.7 P-33-017222

P-33-017222 was recorded in 1988 as a bedrock milling feature with a single slick (Keller 1988a). No artifacts were observed at the time of recordation. The feature was assessed as not significant (Keller 1988a).

3.2.8 P-33-017223

P-33-017223 was recorded in 1988 as a single slick on a low bedrock outcrop (Keller 1988b). “Neither associated surface artifacts or evidence of a subsurface cultural deposit observed”; the site was assessed as not significant (Keller 1988b).

3.2.9 P-33-020551 (CA-RIV-10452H)

P-33-020551 (CA-RIV-10452H) was first recorded by SRI in 2011 as a segment of Simpson Road at the intersection of Winchester Road (SR 79) (Stanton 2011). The resource was updated by Applied Earthworks in 2014 (Smallwood 2014) to include a segment of Simpson Road running approximately 0.88 mile west from the intersection with Patterson Avenue. While the road has been in place since the 1890s, it was noted that the road did not appear eligible for listing on the CRHR or the NRHP; “It has apparently been widened, resurfaced, and restriped in recent decades, and is no longer recognizable from its historical counterpart other than by its location on historic maps” (Smallwood 2014). The only portion of this resource within the APE is at the intersection of Simpson Road and Patterson Avenue.

3.2.10 P-33-020732 (CA-RIV-10654H)

This resource is a segment of Leon Road initially identified on the 1953 *Bachelor Mountain* 7.5-minute and 1942 *Murrieta* 15-minute USGS topographic maps (Kremkau 2011). A 2013 update noted, “The resource and its surroundings have been altered and the original road is no longer visible within this segment” (Roy 2013b).

3.3 OTHER ARCHIVAL RESEARCH

Various additional archival sources were consulted, including historic topographic maps and aerial imagery. These include aerials from 1938, 1953, 1961, 1976, 1978, 1985, and 1996 (NETR Online 2025; University of California, Santa Barbara [UCSB] Digital Library 2025) and several historic USGS topographic maps, including the 1901 *Elsinore* (1:125,000); the 1947, 1949, 1956, 1959, 1965, and 1983 *Santa Ana* (1:250,000); the 1953, 1962, 1970, 1975, 1979, and 1986 *Winchester* (1:24,000); and the 1953, 1961, 1971, 1973, 1976, and 1990 *Bachelor Mountain* (1:24,000) topographic maps. The purpose of this research was to identify historic structures and land use in the area, as well as development and changes to the environment of the area over time.

On the 1901 *Elsinore* (1:125,000) map, the project alignment begins southwest of a pair of hills labeled “Double Butte,” south of the Southern California Railroad, and east of the townsite of Winchester. The alignment crosses the “San Jacinto and Pleasant Valley Company’s Canal,” then crosses through Diamond Valley and the small mining town of Leon. The project alignment terminates in what is recorded as the Los Alamos Valley, east of what is recorded as the Warm Springs Creek and west of the townsite of Auld. With the exception of the community of Winchester, few structures are recorded on this map within the path of the alignment. These features are mostly represented on the 1942 *Murrieta* (1:62,500) map; the San Jacinto and Pleasant Valley Company’s Canal is no longer present on the map, and the Southern California Railroad had been renamed to the Atchison Topeka and Santa Fe Railroad.

The northern portion of the alignment is shown on the *Winchester* (1:24,000) topographic maps. On the 1953 *Winchester* map, the project alignment follows the recorded alignment of Patterson Avenue, before continuing south and running adjacent to the San Diego Aqueduct. The subsequent *Winchester*

topographic maps show the development of Winchester and the surrounding area, though no structures are recorded within the path of the alignment.

The project alignment continues to follow the mapped location of the San Diego Aqueduct on the 1953 *Bachelor Mountain* topographic map, before following the alignments of Leon and Auld Roads, towards what is recorded as Auld Valley on the map. The subsequent maps from 1961 and 1971 remain relatively unchanged; the 1973 map depicts the Skinner Reservoir to the east of the terminus of the alignment.

On the *Santa Ana* (1:250,000) topographic maps, the alignment crosses the Domenigoni Valley and French Valley, and terminates southeast of Auld Ranch, just south of Tucalota Creek. The 1959 map is the first to record the alignment of the San Diego Aqueduct, noting that it contains two pipes located underground; it, and the subsequent maps, shows the development of the roadways within the region.

The early aerial photographs from the 1930s show the general area as largely undeveloped, with an expanse of farming and other agricultural activities in the northern section and scattered homesteads in the southern section (NETR Online 2025; UCSB Digital Library 2025). Evidence of the completed below-ground San Diego Aqueduct is visible on the 1953 and 1961 aerial photographs. While not present along the entire alignment, the land within the mapped location of portions of the aqueduct shows signs of alteration. The most obvious signs of the aqueduct are present northeast of the intersection of Holland and Winchester Roads and near the intersection of modern-day Fowler Drive and Leon Road (NETR Online 2025; UCSB Digital Library 2025). The subsequent aerial photographs show the focus on agriculture continued through the 1970s, when the Skinner Reservoir was finished. This is first seen on the 1976 aerial photograph (UCSB Digital Library 2025).

In general, the early aerial photographs and topographic maps indicate that, prior to 45 years ago and dating back into the nineteenth century, the area in which the project lies contained mostly rural farm and/or dairy-related activity, with structures associated with scattered farmsteads and/or dairy operations predominating in the area. Other than these rural activities, the other features noted on the historic aerials were the construction, beginning in the 1950s, of the San Diego Aqueduct and associated facilities in the area.

3.4 NATIVE AMERICAN CONTACT PROGRAM

HELIX contacted the Native American Heritage Commission (NAHC) on May 3, 2022, for a Sacred Lands File search and list of Native American contacts for the project area. The NAHC indicated in a response dated June 24, 2022, that the Sacred Lands File search was positive and recommended contacting Pechanga, as well as the other tribal contacts provided, in order to obtain additional cultural resources information. Letters were sent on August 9, 2022, to the 23 Native American representatives and interested parties identified by the NAHC, representing 16 tribal entities. The outreach letters addressed what is now the alternative alignment, rather than the proposed project alignment; thus, responses reflect the general cultural sensitivity of the project vicinity, not necessarily specific areas along the proposed alignment. Three responses were received to the outreach conducted by HELIX in 2022, as summarized in Table 2, *Native American Contact Program Responses*.

The Quechan Indian Tribe responded that they have no comments on the project and defer to local Tribes. The Agua Caliente Band of Cahuilla Indians (ACBCI) requested shapefiles of the proposed project alignment, as well as copies of cultural resources reports and site records generated in association with the project. Pechanga responded with detailed information regarding the proximity of the project to

many known archaeological sites, TCPs, Ancestral Placenames, the Winchester Archaeological District [P-33-014370], Traditional Cultural Landscapes, Ancestral remains, and other culturally significant resources. “Considering these known and nearby Ancestral-remains, in light of extensive amounts of previously recorded archaeological sites, and because of Pechanga’s vast project-experience within this Project’s vicinity the Tribe, therefore, is interested in participating in this Project. The Tribe believes the possibility for recovering sensitive subsurface resources, during ground disturbing activities for the Project is extremely high” (letter from Pechanga sent via email and U.S. Postal Service, dated August 23, 2022). Native American correspondence is included as Appendix C (Confidential Appendices, bound separately).

A Notice of Preparation (NOP) for the project’s Environmental Impact Report (EIR) was circulated in July 2022. The locations of some of the project components subsequently changed, and the NOP was recirculated in December 2023 and in January 2024. At that time, responses were received from ACBCI and the Morongo Band of Mission Indians (MBMI); these responses are included in Table 2. The District is in the process of conducting tribal outreach and consultation for the project under AB 52, which will include providing current project plans and details to the tribes who request consultation.

Table 2
NATIVE AMERICAN CONTACT PROGRAM RESPONSES

Contact/Tribe	Response
Quechan Indian Tribe	Responded to HELIX outreach in an email dated August 17, 2022; they have no comments on this project and defer to the more local Tribes and support their decisions on the project.
Agua Caliente Band of Cahuilla Indians (ACBCI)	Responded to HELIX outreach in a letter sent via email on August 23, 2022; the project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe’s Traditional Use Area. The Tribe requests copies of any cultural resources documentation (reports and site records) generated in connection with this project, as well as shapefiles of the APE. Responded to the NOP in a letter dated January 16, 2024; the project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe’s Traditional Use Area. The Tribe requests the following: • The presence of an approved Cultural Resource Monitor(s) during any ground disturbing activities. Should buried cultural deposits be encountered, the Monitor may request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer. • The presence of an archaeologist that meets the Secretary of Interior's standards during any ground disturbing activities. • There is a village site near the project area and there are tribal cultural resources present north of APE. • Please send EIR when completed to ACBCI THPO Consulting email. • Please send cultural reports, site records, and records search info associated with the new project area to ACBCI THPO Consulting.

Contact/Tribe	Response
Pechanga Band of Indians	Responded to HELIX outreach in a letter sent via email on August 23, 2022; "After reviewing the provided maps and our internal documents we have determined that the Project area is not within Reservation land's, although it is located in the heart of Our Ancestral Territory. At this time, we are interested in participating in this Project based upon our 'Ayelkwish/Traditional Knowledge of the Project's proposed Phase locations." Confidential details provided by Pechanga included the proximity of the project to a village and additional Ancestral Placenames, adjacency to 'Ataaxum/Luiseño Traditional Cultural Places, proximity to a ceremonial complex and to the Winchester Archaeological District, as well as a Traditional Cultural Landscape. Pechanga also noted the significance of Warm Springs Creek, which provided interconnectivity between Ancestral Villages. "It is this very proximity to the Creek, which is a source for concern, considering our Ancestral burials are (often) more likely to be located near long-term waterways." "Considering these known and nearby Ancestral-remains, in light of extensive amounts of previously recorded archaeological sites, and because of Pechanga's vast project-experience within this Project's vicinity the Tribe, therefore, is interested in participating in this Project. The Tribe believes the possibility for recovering sensitive subsurface resources, during ground disturbing activities for the Project is extremely high."
Morongo Band of Mission Indians (MBMI)	Responded to the December 2023 NOP in a letter sent via email dated January 19, 2024; the project is located within the ancestral territory and traditional use area of the Cahuilla and Serrano people of the Morongo Band of Mission Indians. "Tribal cultural resources are non-renewable resources and therefore of high importance to the Morongo Tribe, therefore, tribal participation (a.k.a. tribal monitors) is recommended during all ground disturbing activities. We look forward to working with the EMWD to protect these irreplaceable resources out of respect for ancestors of the Morongo people who left them there, and for the people of today and for generations to come." MBMI requested to initiate government-to-government consultation under AB 52 and to receive grading plans, the records search data, the cultural resources survey report, shapefiles for the project, and the geotechnical report.

4.0 SURVEY

4.1 SURVEY METHODS

Two alternative project alignments were included in the field survey conducted by HELIX archaeologists and tribal monitors from Pechanga. A single alignment has been chosen from the alternatives originally proposed; the preferred alignment is the one addressed in detail in this report. The second alignment is

briefly addressed as an alternative in Section 6, *Project Alternative*. An intensive pedestrian survey of the two proposed project pipeline alignment alternatives was undertaken from August 15 to 17, 2022, by HELIX archaeologists Mary Villalobos and Lanice Powless, and Pechanga tribal cultural monitor Robert Cordova. The survey corridors were divided into four sections for better efficiency in fieldwork and reporting; sections 3 and 4 encompass the currently proposed project alignment.

An additional pedestrian survey of portions of the alignment not covered in the initial survey occurred on March 3, 2023, and was conducted by HELIX archaeologists Julie Roy and Mary Villalobos, with Pechanga tribal cultural monitor Cameron Linton. The survey corridors consisted of the pipeline alignment and a 100-foot-wide buffer corridor, 50 feet on each side of the proposed pipeline centerline (see Figure 3). Where feasible within the corridor, survey transects were walked in five-meter intervals. Some segments of the survey corridor could not be accessed, due to private property where fencing precluded access, active agricultural fields where crops were present and/or irrigation was actively occurring, or within built environments. The survey sections are described in more detail below under 4.2, *Survey Results*. A field visit was conducted by Ms. Villalobos on June 20, 2025, to check the locations of previously recorded archaeological sites and ascertain their current condition to the extent feasible.

4.2 SURVEY RESULTS

As noted above, the survey corridors were divided into four sections for better efficiency; sections 3 and 4 encompass the currently proposed project alignment. Section 3 began at the intersection of Simpson Road and Leon Road, and turned south on Patterson Avenue, past Domenigoni Parkway and Newport Road, and continued southwest to Leon Road (Plates 1 and 2). Most of this section was inaccessible due to fences and agricultural uses (Plate 2). When this section of the alignment crossed roads, the survey crew viewed as much of the corridor as they could from the roadways. The accessible portion ran through a highly disturbed area in the community of Winchester, as well as some open fields. Vegetation included mostly non-native trees, shrubs, and grasses. Modern trash littered many areas in the section. Visibility was between 30 and 60 percent; soil consisted of a mixture of fill soil and sandy silt. The inaccessible portions of the section included fenced properties and sod fields.



Plate 1. Patterson Avenue, view to the south.



Plate 2. Agricultural fields at Winchester Road and Holland Road, view to the southwest.

Section 4 began at Leon Road and ran south to Auld Road and east to Washington Avenue (Plates 3 and 4). The section consisted of disturbed and open fields, ranch properties, and residential neighborhoods, as well as small hills. Vegetation included buckwheat, mustard grass, and oak trees, as well as non-native trees and shrubs. Modern trash littered many portions of the section. Visibility in much of this area was fair at 20 to 50 percent, with some small sections having zero to 20 percent visibility and others having close to 100 percent. Along Auld Road, areas outside the roadway were generally not accessible, either due to residential development or to fences. The soil consisted of brown sandy silt.



Plate 3. Leon Road, view to the south.



Plate 4. Auld Road to Washington Avenue, view to the east.

4.2.1 Descriptions of Cultural Resources Within the Project APE

Ten resources have been previously recorded within the project APE: six bedrock milling sites, three historic-era roads, and the historic-aged San Diego Aqueduct. As described below and summarized in Table 3, *Status of Resources Within the Project APE*, five of these resources were reidentified within the APE. No cultural material could be identified at two of the previously recorded sites; one of these may have been mismapped but is also recorded as part of another site (P-33-002970, merged with P-33-003839); a few weathered boulders were noted in the location of the other site that was not found (P-33-011038). Although the records search map shows P-33-011037 as extending into the APE, the site was described as being on a knoll and was mapped on the site record as north of Auld Road, thus placing it outside the APE. The knoll is fenced and could not be accessed as part of the current study. P-33-017223 could not be accessed due to fences and locked gates. The segment of P-33-015734 (the San Diego Aqueduct) recorded within the APE was not observed, as it is located underground, but its presence is known within the APE. The locations of cultural resources recorded within the APE are shown in Figures 4a-e, *Cultural Resources* (Appendix D, confidential, bound separately). Site records for these resources are included as Appendix E, confidential, bound separately).

Table 3
STATUS OF RESOURCES WITHIN THE PROJECT APE

Resource Number (P-33-)	Resource Number (CA-RIV-)	Age and Resources Present	Description	Reidentified within APE
002970	2970	Precontact site	Several bedrock milling features spread out in two loci; later merged with P-33-003839.	No; possibly mismapped; recorded as merged with P-33-03839
003839	3839	Precontact site	Several bedrock milling features; later merged with P-33-002970.	Yes

Resource Number (P-33-)	Resource Number (CA-RIV-)	Age and Resources Present	Description	Reidentified within APE
011037	6648	Precontact site	Three bedrock milling features with no artifacts observed and no evidence of subsurface deposits; site noted as in good condition.	No; site description is on knoll outside APE that is fenced and could not be accessed
011038	6649	Precontact site	Several bedrock milling features with one artifact observed on the surface and no cultural material recovered in shovel test pits and excavation units.	No; a few highly weathered boulders were noted but no cultural material
013871	11964	Historic structure	Winchester Road, used as early as the late 1880s; the current alignment has been in use since 1949.	Yes
015734	8195	Historic structure	San Diego Aqueduct.	Yes, although the segment of the Aqueduct is belowground, it is known to exist within the APE
017222	---	Precontact site	A single bedrock milling feature.	Yes
017223	---	Precontact site	A single bedrock milling feature with no associated artifacts.	No; could not be accessed due to a fence and locked gates
020551	---	Historic structure	Simpson Road, in use since at least the 1890s; segment within APE assessed as not a significant resource.	Yes
020732	10654	Historic structure	Segment of Leon Road north of Winchester Road; assessed as not a significant resource.	Yes

4.2.1.1 P-33-002970 (CA-RIV-2970) and P-33-003839 (CA-RIV-3839)

The mapped location of P-33-002970 (CA-RIV-2970), a bedrock milling site consisting of features in two loci and later merged with P-33-003839 (CA-RIV-3839), was observed during the field survey; however, no features or artifacts were observed. Thus, the resource was not reidentified. This site appears to have been mismapped at the EIC and SCIC, however; while a sketch map with the original 1984 site record shows P-33-002970 on the south side of a creek, the location on the USGS map shows it on the north side of the creek, where no bedrock was observed. P-33-003839 was reidentified within the project APE and found to be in good condition; seven boulders were located, with a total of one mortar, three basins, and 15 slicks observed.

4.2.1.2 P-33-011037 (CA-RIV-6648)

This site was recorded as three bedrock milling features with no associated artifacts or cultural deposits. A 2005 site record update noted, “The property surrounding this site has been developed into residential housing. The site was not disturbed during grading” (Hoover 2005). Although P-33-011037 is mapped at EIC and SCIC as extending into Auld Road, it is described as being on a knoll, and the map

with the site record shows it north of the road, thus outside the APE. The knoll on which this site is located is fenced and could not be accessed, but it appears to be intact.

4.2.1.3 P-33-011038 (CA-RIV-6649)

This site was recorded as several bedrock milling features with no associated cultural deposit; a single flake was recovered during the testing program, with no subsurface cultural material encountered. The 2006 site record noted, "The results of the testing and evaluation program suggest that Site CA-RIV-6649 does not meet the criteria for listing in the National Register of Historic Places or the California Register of Historical Resources." The mapped location of P-33-011038 was visited, but no cultural material was observed. A few highly weathered boulders were noted; the milling features may have eroded and are no longer recognizable.

4.2.1.4 P-33-013871 (CA-RIV-11964H)

The mapped alignments of the historic Winchester Road, P-33-013871 (CA-RIV-11964H), were encountered several times during the field survey. The portion of the former Winchester Road now called Auld Road was walked during the field survey, while other portions of the road—notably SR 79—were crossed by the surveyors. In all, the segments of the road visited during the survey were noted to be in good condition (Plate 5).



Plate 5. Overview of Winchester Road from Leon Road, view to the north.

4.2.1.5 P-33-015734 (CA-RIV-8195)

P-33-015734 consists of segments of the San Diego Aqueduct and San Diego Canal. The segment within and adjacent to the APE is the underground First Aqueduct; due to its underground location, the aqueduct was not observed during the field survey.

4.2.1.6 P-33-017222

P-33-017222, described as a bedrock milling feature with a single slick, was observed in proximity to a large pile of soil and rock and found to be in fair condition.

4.2.1.7 P-33-017223

P-33-017223 was recorded as a single slick on a low bedrock outcrop. The location of the site could not be visited during the current survey; it was inaccessible, due to a fence and locked gates.

4.2.1.8 P-33-020551 (CA-RIV-10452H)

P-33-020551 (CA-RIV-10452H) consists of a segment of Simpson Road that was previously assessed as not a significant resource. The only portion of this resource within the APE is the intersection of Simpson Road and Winchester Road, which was noted to be in good condition (Plate 6).



Plate 6. Overview of Simpson Road at intersection with Winchester Road, view to the west.

4.2.1.9 P-37-020732 (CA-RIV-10654)

The segment of Leon Road recorded as P-37-020732 (CA-RIV-10654) was observed during the field survey; the remnants of the road were observed to be in the same condition as noted by AECOM in 2013 (Plate 7).



Plate 7. Overview of P-37-020732, view to the north.

5.0 IMPACTS AND MANAGEMENT RECOMMENDATIONS

5.1 SUMMARY OF CULTURAL RESOURCES WITHIN THE APE

The results of the records search and field investigation conducted by HELIX identified 10 previously recorded cultural resources within the project APE, which consists of a 50-foot buffer on either side of the project alignment centerline. No previously unrecorded resources were identified within the project APE during the field survey.

The 10 cultural resource sites identified within the project APE include six precontact sites consisting of bedrock milling features with no associated cultural material (except a single flake at P-37-011038), three historic-era roadway segments, and the San Diego Aqueduct. As addressed in Section 4.2, *Survey Results*, one of the previously recorded sites, P-33-011037, is mapped as extending into the project APE; however, it is described as being located on a knoll that is just outside the APE.

Segments of the alignment could not be surveyed due to lack of access to fenced properties, as well as crops or heavy vegetation in some fields crossed by the alignment.

5.2 PROJECT IMPACTS AND SIGNIFICANCE

The NRHP/CRHR eligibility and potential project impacts to the 10 cultural resource sites recorded within the project APE, including the alignment and a 50-foot buffer on either side of the centerline, are presented in Table 4, *NRHP/CRHR Eligibility and Potential Project Impacts to Cultural Resources Within the APE*. The eligibility recommendations are based on information provided in the site records or other available documentation; no resources were individually evaluated as part of the current study. Six of the 10 resources within the project APE have been assessed as not eligible for inclusion in the NRHP or

CRHR. There is no record that sites P-33-002970/P-33-003839 and P-33-011037 have been evaluated for NRHP or CRHR eligibility.

The First San Diego Aqueduct is 71.1 miles long and consists of Pipeline 1 (1945-1947) and Pipeline 2 (1952-1954). The aqueduct is a combination of above ground canal and below ground pipe. Segments of the aqueduct, outside the proposed project area, were recorded in 2005 as P-33-015734 and were updated in 2007 in conjunction with undertakings proposed by other applicants at that time. The First San Diego Aqueduct, P-33-015734, has been previously evaluated as eligible for listing in the NRHP and CRHR as regionally significant under Criterion A/1 "as a driving and enabling force in the economic development of San Diego" (Easter and Beedle 2005). Cook and others (2012) recommended the overall Aqueduct as eligible under Criterion A but not eligible under "Criterion B, because there is no association with any historically important individual. It is not recommended as eligible under Criteria [sic] C, since there are earlier and better aqueduct engineering examples in southern California. The aqueduct is comprised of structures and materials that were not unique for its time but were standard within the field. The resource is not recommended as eligible under Criterion D, because data recovery would not be likely to yield important historical data" (Cook et al. 2012:103). The proposed project would reline an approximately 3-mile segment of the overall First San Diego Aqueduct. Because its historic significance is related to the role a reliable water source played in the settlement and economic development of the region, versus the engineering of the aqueduct (Criterion C/3), its significance is foremost reflected in its location, alignment, and overall length, and secondarily in its materials and design. The proposed project would fully retain its location, alignment, and overall length. Only a tiny percentage of the aqueduct would be impacted by relining and would not entail the loss of existing materials. The connections are a small part of the overall aqueduct and are not significant on their own. Because the primary characteristics would be retained and preserved, and no materials would be lost, HELIX believes that the project would not have an adverse effect on the historical resource.

As previously addressed, P-33-011037 is mapped at the SCIC as extending into the APE, but it is actually located on a knoll outside the APE and thus would not be subject to direct impacts from project implementation.

The other eight resources recorded within the project APE would be subject to impacts from development of the project. Six of these resources have been assessed as not NRHP/CRHR-eligible; thus, these six resources are not historic properties per the NHPA or historical resources per CEQA, and impacts to these resources do not constitute significant effects.

P-33-002970/P-33-003839 has not been evaluated for NRHP or CRHR eligibility. Although no cultural material was observed at the mapped location of P-33-002970 during the current survey, that site was previously merged with P-33-003839, at which intact bedrock milling features were observed during the current survey. Thus, this site is potentially a historic property/historical resource and impacts to it potentially constitute significant effects.

Table 4
NRHP/CRHR ELIGIBILITY AND POTENTIAL PROJECT IMPACTS TO CULTURAL RESOURCES RECORDED WITHIN THE APE

Resource Number (P-33-)	Description	NRHP/CRHR Eligibility Recommendation	Project Impacts (within APE)
002970 (CA-RIV-2970)	Several bedrock milling features spread out in two loci; later merged with P-33-003879.	Not evaluated	Yes if still extant
003839 (CA-RIV-3839)	Several bedrock milling features; later merged with P-33-002970.	Not evaluated	Yes
011037 (CA-RIV-6648)	Three bedrock milling features with no artifacts observed and no evidence of subsurface deposits; site noted as in good condition.	Not evaluated	No; located on knoll outside APE
011038 (CA-RIV-6649)	Several bedrock milling features with one artifact observed on the surface and no cultural material recovered in shovel test pits and excavation units.	Not eligible	Yes if still extant
013871 (CA-RIV-11964)	Winchester Road, used as early as the late 1880s; the current alignment has been in use since 1949.	Not eligible	Yes
015734 (CA-RIV-8195)	San Diego Aqueduct and Canal, built in 1947, 1951, 1958, and 1959.	Eligible	Yes; however, relining would not constitute an adverse effect
017222	A single bedrock milling feature.	Not eligible	Yes
017223	A single bedrock milling feature with no associated artifacts.	Not eligible	Yes
020551 (CA-RIV-10452H)	Simpson Road, in use since at least the 1890s; segment within APE assessed as not a significant resource.	Not eligible	Yes
020732 (CA-RIV-10654)	Segment of Leon Road north of Winchester Road.	Not eligible	Yes

5.3 MANAGEMENT RECOMMENDATIONS

Based on the results of the current study, one historical resource (per CEQA)/historic property (per NHPA), the San Diego Aqueduct, will be relined as part of the project; however, the relining would not adversely affect the resource, as explained in Section 5.2. One potentially eligible resource will be affected by the project; this resource (P-33-002970/P-33-003839) will require evaluation to assess its eligibility. The remaining resources within the APE are not historic properties/historical resources.

However, as noted in this report, portions of the alignment could not be surveyed due to lack of access or other limiting factors. Therefore, there is a potential for additional historic properties/historical resources to be present that could be affected by the project. In addition, numerous cultural resources are known in proximity to the project area, including a large archaeological/historic district that has been identified by Pechanga as a TCP/TCR, and the general area is sensitive for cultural resources.

Based on the presence of cultural resources within and in proximity to the project, and the fact that portions of the APE could not be surveyed due to lack of access, active agricultural uses, and other factors that may be obscuring cultural resources within the APE, it is recommended that an archaeological and Native American monitoring program be implemented, as detailed below.

MM CUL-1 **Updated Cultural Resources Survey**. Because portions of the project alignment could not be adequately surveyed for this programmatic study and given the long time span over which the project will be developed, an updated cultural resources survey shall be conducted for each project segment prior to the implementation of that phase of the project. The cultural resources survey will include an updated records search for the phase, a pedestrian survey of the phase's APE by a qualified archaeologist with the participation of a traditionally and culturally affiliated (TCA) Native American monitoring tribe, documentation of cultural resources identified, and preparation of a Phase I cultural resources survey report.

MM-CUL-2: **Tribal Monitoring Agreement.** At least 30 days prior to the start of ground-disturbing activities, EMWD shall contact the Consulting Tribe to develop a Cultural Resources Treatment Monitoring Agreement (Agreement). The Agreement shall address the treatment of archaeological resources inadvertently discovered within the project APE; project grading; ground disturbance and development scheduling; the designation, responsibilities, and participation of tribal monitor(s) during grading, excavation, and ground-disturbing activities; and compensation for the tribal monitors, including overtime, weekend rates, and mileage reimbursement.

MM-CUL-3: **Tribal Monitoring During Construction.** A tribal monitor shall be present for ground-disturbing activities associated with the project. At least seven business days prior to ground-disturbing activities, EMWD shall notify the Tribe(s) of the grading/excavation and monitoring program/schedule, to coordinate the tribal monitoring schedule. The tribal monitor shall have the authority to stop and redirect grading activities to evaluate the nature and significance of any archaeological resources discovered within the project limits. Such evaluation shall include culturally appropriate temporary and permanent treatment pursuant to the Cultural Resources Treatment and Monitoring Agreement, which may include avoidance of cultural resources, in-place preservation, data recovery, and/or reburial so the resources are not subject to further disturbance in perpetuity. Any reburial shall occur at a location determined between the District and the Consulting Tribe, details of which shall be addressed in the Cultural Resources Treatment and Monitoring Agreement. Treatment may also include curation of the cultural resources at a tribal curation facility, as determined in discussion among the District, the project archaeologist and tribal representatives as addressed in the Cultural Resources Treatment and Monitoring Agreement.

MM-CUL-4: **Cultural Resources Monitoring Plan and Worker Environmental Awareness Program:** Prior to grading activities, a Cultural Resources Monitoring Plan (plan) shall be prepared by a qualified archaeologist in consultation with the Consulting Tribe(s). The plan shall identify the location and timing of cultural resources monitoring. Monitoring will consist of full time monitoring by a qualified archaeologist of ground-disturbing activities for areas within 500 feet of a known or previously recorded archaeological resource and spot-checking by a qualified archaeologist for areas greater than 500 feet from a known or previously recorded archaeological resource; this monitoring provision does not apply to non-archaeological, built environment resources, such as the San Diego Aqueduct. The presence of a historic-era roadway (e.g., Leon Road, Winchester Road) does not trigger archaeological monitoring within 500 feet.

The plan shall contain an allowance for the qualified archaeologist, based on observations of subsurface soil stratigraphy or other factors during initial grading, and in consultation with the Native American monitor and the lead agency, to reduce or discontinue monitoring as warranted if the archaeologist determines that the possibility of encountering archaeological deposits is low. The plan shall outline the appropriate measures to be followed in the event of unanticipated discovery of cultural resources during project implementation. The plan shall identify avoidance as the preferred manner of mitigation for impacts to cultural resources. The plan shall establish the criteria utilized to evaluate the historic significance (per CEQA) of the discoveries, methods of avoidance consistent with CEQA Guidelines Section 15126.4(b)(3), as well as identify the appropriate data recovery methods and procedures to mitigate the effect of the project if avoidance of significant historical or unique archaeological resources is determined to be infeasible. The plan shall also include reporting of monitoring results within a timely manner, disposition of artifacts, curation of data, and dissemination of reports to local and state repositories, libraries, and interested professionals.

As part of a Worker Environmental Awareness Program (WEAP), a qualified archaeologist and Consulting Tribe(s) tribal monitor shall attend a pre-grade meeting with EMWD staff, the contractor, and appropriate subcontractors to discuss the monitoring program, including protocols to be followed if cultural material is encountered.

MM-CUL-5: **Evaluation of Discovered Resources**. Resources discovered at the development site during monitoring shall be inventoried and analyzed by the project archaeologist and tribal monitor. A monitoring report will be prepared detailing the methods and results of the monitoring program, as well as the disposition of cultural material encountered. If no cultural material is encountered, a brief letter report will be sufficient to document monitoring activities.

If cultural resources are identified during the Phase I survey required per CUL-1 and impacts to these resources cannot be avoided through project design, a testing program shall be implemented to assess eligibility of the resources to the NRHP and CRHR. If impacts to historic properties/historical resources are identified, appropriate treatment measures shall be developed and implemented to mitigate such impacts. Treatment measures may include avoidance of the resource if feasible; preservation in place through capping or other means; relocation of cultural features, such as bedrock milling

features, to an area where they will not be subject to disturbance/destruction; data recovery excavation; or ethnographic study if the resource is a TCR/TCP.

MM-CUL-6: **Disposition of Inadvertent Discoveries.** If Native American cultural resources are recovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries with the tribe. The District shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural resources, and adhere to the following:

1) Preservation-in-place is the preferred option; preservation-in-place means avoiding the resources and leaving them in the place where they were found with no development affecting the integrity of the resource.

2) If preservation-in-place is not feasible, on-site reburial of the discovered items as detailed in the plan required pursuant to mitigation measure CUL-4 is the next preferable treatment measure. This shall include measures and provisions to protect the future reburial area from further impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items shall be permitted without the written consent of all Consulting Native American Tribal Governments.

3) In the event that on-site reburial is not feasible, EMWD will enter into a curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal Regulations 800 Part 79 and therefore would be curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation.

MM-CUL-7: **Non-Disclosure of Reburial Locations.** It is understood by all parties that unless otherwise required by law, the site of any reburial of culturally sensitive resources shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The coroner, pursuant to the specific exemption set forth in California Government Code 6254(r), parties, and Lead Agencies will be asked to withhold public disclosure information related to such reburial.

MM-CUL-8: **Procedure for Discovery of Human Remains.** If Native American human remains are encountered, Public Resources Code Section 5097.98 and California Health and Safety Code Section 7050.5 will be followed. If human remains are encountered, no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to the origin. Further, pursuant to California Public Resources Code Section 5097.98(b), the remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the coroner shall contact the Native American Heritage Commission within 24 hours. Subsequently, the Native American Heritage Commission shall identify the person or persons it believes to be the "most likely descendant." The most likely descendant shall then make recommendations

and engage in consultations concerning the treatment of the remains as provided in Public Resources Code Section 5097.98.

6.0 PROJECT ALTERNATIVE

The District considered several potential routes for the project, one of those routes is called the "Non-Metropolitan Alternative" (Figure 5, *Non-Metropolitan Alternative Alignment*). The Non-Metropolitan Alternative route begins at the same location as the proposed project's route. The alternative route travels north along Washington Street, then northwesterly on Abelia Street and continues north and west in a combination of paved roads and undeveloped dirt roads to its termination at Simpson Road (Figure 5). Near the start of the alignment, west of Washington Street and north of Auld Road, the alternative included a proposed pump station.

This alternative alignment was included in the original records search and the 2025 records search update, tribal outreach, 2022 field survey, and 2025 field check. Twenty-seven cultural resources have been previously recorded within the alternative alignment and a 50-foot buffer on either side of it. As summarized in Table 5, *Previously Recorded Resources Within the Non-Metropolitan Alternative Alignment and Buffer*, a number of these resources appear to have been destroyed by previous grading or development, and several could not be accessed during the project survey. However, the project alternative alignment crosses through the significant archaeological district, which has been identified by Pechanga as a TCP/TCR.

Table 5
PREVIOUSLY RECORDED RESOURCES WITHIN THE NON-METROPOLITAN ALTERNATIVE ALIGNMENT AND BUFFER

Resource Number (P-33-)	Resource Number (CA-RIV-)	Age and Resources Present	Description	Recorder, Date	Reidentified
001270	1270	Precontact site	Milling site with several loci; manos, metates, hammerstones, flakes. Site record update from 1999 indicated no cultural material present.	Bouscaren, 1978; Schroth, 1980; Drover and Smith, 1990; Pierson, 1999	No; mapped location has been completely developed
002303	2303	Precontact site	Three slicks on three separate boulders.	Baldwin, 1980	No; appears to have been destroyed by past grading
002304	2304	Precontact site	One boulder with four slicks.	Baldwin, 1980	No; area was not accessed due to being within private property
002305	2305	Precontact site	Bedrock milling slicks.	Baldwin, 1980; Johnson, 1999	No; area was not accessed due to being within private property

Resource Number (P-33-)	Resource Number (CA-RIV-)	Age and Resources Present	Description	Recorder, Date	Reidentified
002306	2306	Precontact site	Milling site with six loci of grinding features: slicks, mortars, and basin metates.	Baldwin, 1980; Johnson, 1999	No; not identified within survey corridor
002311	2311	Precontact site	One slick.	Johnson, 1990	No; not identified within survey corridor
003204	3204	Precontact site	Milling site with 27 milling elements on five boulders.	Schroth, 1987; Ballester, 2003	No; area was not accessed due to being within private property
004008	4008	Historic site	Historic trash scatter dating to late nineteenth and early twentieth centuries; assessed as not significant. Part of P-33-014370.	Phillips, 1990; Ballester, 2003; AECOM, 2012	No; appears to have been destroyed by past grading
004012	4012	Historic structure	San Jacinto and Pleasant Valley Company's Canal; assessed as significant and mitigation measures implemented. Part of P-33-014370.	Bissell, 1990; Miller and Brown, 2002; Ballester, 2003; AECOM, 2012	No; appears to have been destroyed by past grading
006138	--	Precontact isolate	Isolated hammerstone.	Robinson, 1995	No; appears to have been destroyed by past grading
007800	--	Historic structure	Historic barn.	Warner, 1983	No; appears to have been demolished
007801	--	Historic structure	Vernacular wood frame house and outbuildings.	Warner, 1983	Yes
009658	6458	Precontact site	Milling site with six slicks on five boulders within larger outcropping.	Hogan, 1999	No; not identified within survey corridor
009659	6459	Precontact site	Milling site with three features on three boulders.	Hogan, 1999	No; not identified within survey corridor
009660	6460	Precontact site	Milling site with six features on one boulder.	Hogan, 1999	No; not identified within survey corridor

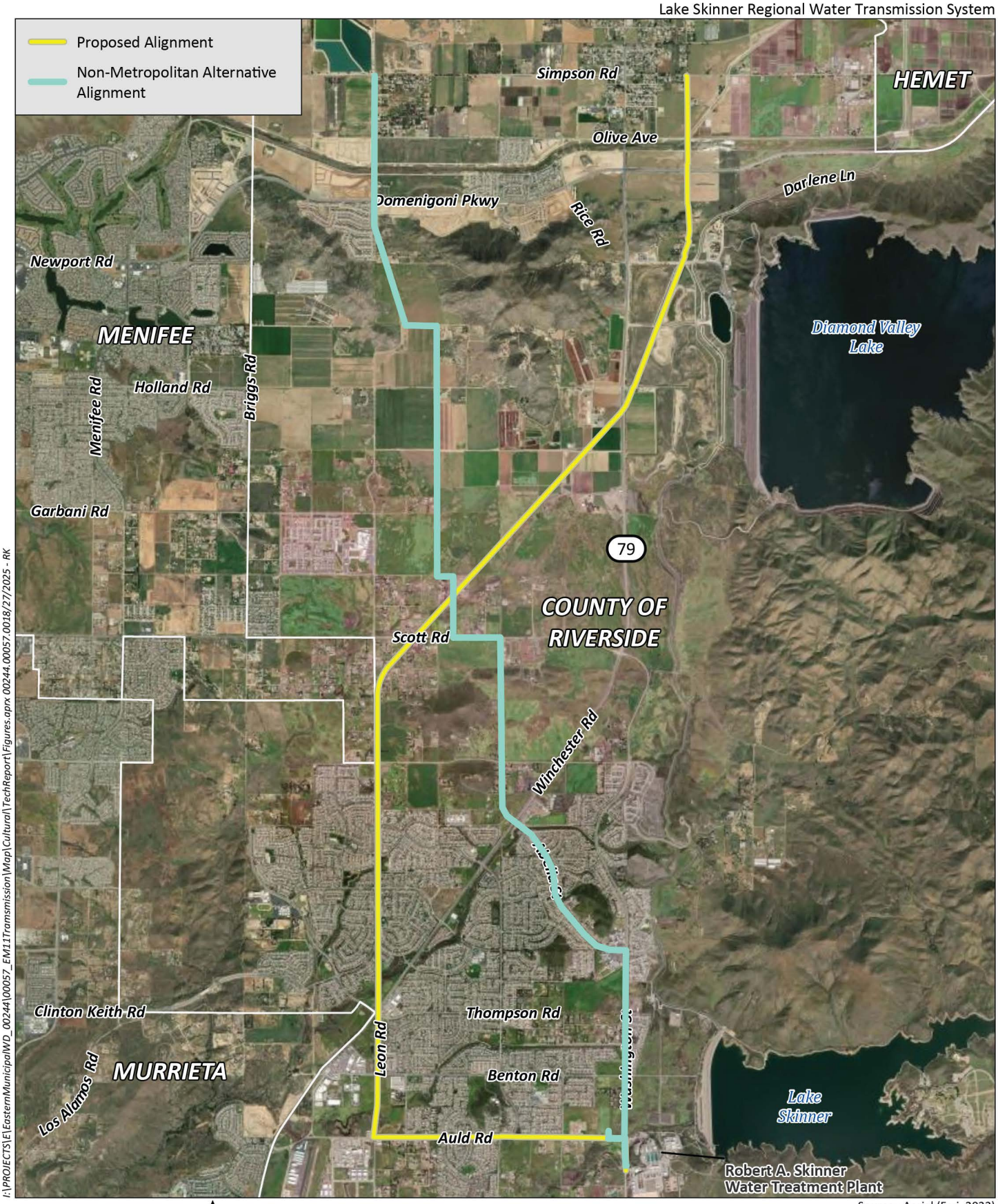
Resource Number (P-33-)	Resource Number (CA-RIV-)	Age and Resources Present	Description	Recorder, Date	Reidentified
011230	--	Precontact isolate	Isolated metate fragment and hammerstone.	Sawyer and Baker, 2001; Kremkau 2011	No; appears to have been destroyed by past grading
012439	7060	Precontact site	Milling site with a single slick.	Porter, 2003; Ballester, 2003; AECOM, 2012	No; appears to have been destroyed by past grading
012443	7064	Precontact site	Milling site with nine milling slicks on three boulders.	Smallwood and Bouscaren, 2003; Ballester, 2003; AECOM, 2012	No; not identified within survey corridor
012444	7065	Precontact site	Milling site with one slick.	Smallwood and Bouscaren, 2003; Ballester, 2003; AECOM, 2012	No; not identified within survey corridor
012521	--	Precontact isolate	Mortar fragment.	Schroth and Everson, 1987; Kremkau, 2011	No; not identified within survey corridor
013871	--	Historic structure	Winchester Road, used as early as the late 1880s; the current alignment has been in use since 1949.	Goodwin, 2003; Cooley, 2007; Bursan, 2008; AECOM 2012; Smallwood, 2013; Roy, 2013	Yes
014370	--	Precontact and historic district	Archaeological district comprised of a total of 134 resources.	Dahdul, 2004; AECOM 2012	Yes
014389	--	Historic site	Refuse deposit.	Bragado, 2005; AECOM 2012	No; not identified within survey corridor
015734	8195	Historic structure	San Diego Aqueduct.	Easter and Beedle, 2005; Craft, 2008	Yes, although the segment of the Aqueduct is belowground, it is known to exist and crosses the APE
017222	--	Precontact site	Milling site with a single slick.	Keller, 1988	Yes
017628	--	Precontact isolate	Isolated ground stone fragments.	Ballester, 2008	No; not identified within survey corridor
021023	--	Historic Building	Single family residence built in 1965.	AECOM 2012	Yes

One historical resource/historic property, the San Diego Aqueduct, has been identified as crossed by the Non-Metropolitan Alternative alignment in one location. If the Aqueduct would be subject to any future, as yet unidentified impacts, appropriate measures would need to be developed and implemented to mitigate those impacts.

A number of previously recorded resources along the alternative alignment appear to have been destroyed by development or grading; others could not be reidentified on the surface but may retain some subsurface components. In addition, segments of the alternative alignment could not be surveyed due to lack of access or other limiting factors. Therefore, there is the potential for additional historic properties/ historical resources to be present that could be affected by development of the project alternative. Further, the alternative alignment crosses P-33-014370, a large archaeological/historic district that has been identified by Pechanga as a TCP/TCR, and the general area is sensitive for cultural resources.

The Non-Metropolitan Alternative alignment would be subject to the same mitigation measures detailed for the proposed project in section 5.3, *Management Recommendations*.

Lake Skinner Regional Water Transmission System



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Source: Aerial (Esri, 2022)

HELIX Environmental Planning

Non-Metropolitan Alternative Alignment

Figure 5

7.0 REFERENCES

AECOM

2012 DPR site form update for P-33-013871 (CA-RIV-11964). Form on file at the South Coastal Information Center, San Diego State University.

Applied EarthWorks, Inc.

2001 *Metropolitan Water District of Southern California, Eastside Reservoir Project, Final Report of Archaeological Investigations*. Volumes I to V. General editor, Susan K. Goldberg. Report prepared for the Metropolitan Water District of Southern California, Los Angeles.

Ashkar, S., and S. Hilton

1999a DPR site form update for P-33-002970 (CA-RIV-2970). Form on file at the South Coastal Information Center, San Diego State University.

1999b DPR site form update for P-33-003839 (CA-RIV-3839). Form on file at the South Coastal Information Center, San Diego State University.

Autobee, Robert

n.d. *San Diego Project History*. Prepared by the United States Bureau of Reclamation. Electronic document available at https://www.usbr.gov/projects/index.php?id=389, accessed June 30, 2025.

Ballester, Daniel, and Thomas Melzer

2005 DPR site form update for P-33-011038 (CA-RIV-6649). Form on file at the South Coastal Information Center, San Diego State University.

Bean, Lowell John

1972 *Mukat's People: The Cahuilla Indians of Southern California*. University of California Press, Berkeley and Los Angeles.

1978 Cahuilla. In *California*, edited by Robert F. Heizer, pp. 575-587. Handbook of North American Indians, vol. 8. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Bean, Lowell John, and Florence C. Shipek

1978 Luiseño. In *California*, edited by Robert F. Heizer, pp. 550-563. Handbook of North American Indians, vol. 8. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Bean, Lowell John, and Katherine Siva Saubel

1972 *Temalpakh: Cahuilla Indian Knowledge and Usage of Plants*. Malki Museum Press, Banning.

Bean, Lowell J., and Sylvia B. Vane (editors)
1980 *The Ethnography and History of the Devers to Lamb Canyon Transmission Corridor Area, Riverside County, California*. Prepared by Cultural Systems Research, Inc., Menlo Park, California, for Southern California Edison Company, Rosemead California.

Bean, Lowell J., Sylvia B. Vane, and Jackson Young
1991 *The Cahuilla Landscape: The Santa Rosa and San Jacinto Mountains.* Ballena Press, Menlo Park, CA.

Bettinger, Robert L.
1974 Dating the Perris Reservoir Assemblages. In *Perris Reservoir Archaeology,* edited by James F. O'Connell, Philip J. Wilke, Thomas F. King, Carol L. Mix, pp. 159–162. California Department of Parks and Recreation Reports No. 14. Sacramento.

Bolton, Herbert E.
1930 *Anza's California Expeditions, Vols. I–IV*. University of California Press, Berkeley.

Boscana, Geronimo
1947 *Chinigchinich. A Historical Account of the Origin, Customs, and Traditions of the Indians at the Missionary Establishment of St. Juan Capistrano, Alta-California*. Translated by Alfred Robinson. Biobooks, Oakland.

Brigandi, Phil
1999 *The Outposts of Mission San Luis Rey*. Journal of San Diego History 45(2):106–112.

Brunzell, David
2003 DPR site form update for P-33-003839 (CA-RIV-3839). Form on file at the South Coastal Information Center, San Diego State University.

Bull, Charles S.
1983 Shaking the Foundations: The Evidence for San Diego Prehistory. *Casual Papers: Cultural Resource Management* 1(3):15-64. Cultural Resource Management Center, San Diego State University.

Bursan, Andrew
2008 DPR site form for P-33-013871 (CA-RIV-11964). Form on file at the South Coastal Information Center, San Diego State University.

Bynon, A. A.
1893 History and Directory of Riverside County 1893–1894. Historical Commission Press, Riverside, California (1992 reprint from 1893).

Carrico, Richard L., Theodore G. Cooley, and Joyce M. Clevenger
1993 *Archaeological Excavations at the Harris Site Complex, San Diego County, California.* Report prepared by Ogden Environmental and Energy Services, and on file at the South Coastal Information Center (SCIC), San Diego State University.

City of Perris
n.d. History of Perris, electronic document, available at https://www.cityofperris.org/our-city/about-perris/history, accessed on September 4, 2015.

Cody, A.
1984 DPR site form for P-33-002970 (CA-RIV-2970). Form on file at the South Coastal Information Center, San Diego State University.

Cook, John R., and Sinéad Ní Ghabhláin, Sarah Stringer-Bowsher, Shannon Davis, Don Laylander, Jennifer Krintz, Scott Wolf, and Brad Comeau
2012 *Cultural Resources Assessment for the Gregory Canyon Landfill Project, Northern San Diego County, California*. Prepared for U.S. Army Corps of Engineers, Los Angeles District. Report on file at ASM Affiliates, Inc.

Cupples, Sue Ann, and Ken Hedges
1977 *San Luis Rey River Basin: Overview of Cultural Resources*. San Diego State University Foundation. Prepared for US Army Corps of Engineers. Electronic document, available at http://www.dtic.mil/dtic/tr/fulltext/u2/a146300.pdf. Accessed May 16, 2018.

Des Lauriers, Matthew R.
2008 A Paleoindian Fluted Point from Isla Cedros, Baja, California. *Journal of Island & Coastal Archaeology* 3:271–276.

Dice, Michael
2001a DPR site form for P-33-011037 (CA-RIV-6648). Form on file at the South Coastal Information Center, San Diego State University.

2001b DPR site form for P-33-011038 (CA-RIV-6649). Form on file at the South Coastal Information Center, San Diego State University.

Dillon, Brian D.
2002 California Paleo-Indians: Lack of Evidence, or Evidence of a Lack? In *Essays in California Archaeology: A Memorial to Franklin Fenenga*. Edited by William J. Wallace and Francis A. Riddell. Contributions of the University of California Archaeological Research Facility, No. 60. Berkeley, California.

Drover, Christopher and D.M. Smith
1990 DPR site form for P-33-003839 (CA-RIV-3839). Form on file at the South Coastal Information Center, San Diego State University.

DuBois, Constance
1908 The Religion of the Luiseño Indians of Southern California. *University of California Publications in American Archaeology and Ethnology* 8(3):69-186.

Easter, O., and P. Beedle.
2005 DPR site form for P-33-011037 (CA-RIV-6648). Form on file at the South Coastal Information Center, San Diego State University.

Eastern Municipal Water District (EMWD)
2015 2015 Water Facilities Master Plan Update. Prepared by West Yost Associates Consulting Engineers.

Erlandson, Jon M., Torben C. Rick, Terry L. Jones, and Judith F. Porcasi
2007 One If by Land, Two If by Sea: Who Were the First Californians? In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, pp. 53–62. Altamira Press, Lanham, Maryland.

Ezell, Paul H.
1987 The Harris Site – An Atypical San Dieguito Site, or Am I Beating a Dead Horse? In *San Dieguito–La Jolla: Chronology and Controversy*, edited by Dennis Gallegos, pp. 15-22. San Diego County Archaeological Society Research Paper Number 1. San Diego.

Fickewirth, A. A.
1992 *California Railroads*. Golden West Books, San Marino, California.

Fitzgerald, Richard T., and Michael F. Rondeau
2012 A Fluted Projectile Point from Crystal Cove State Park, Orange County, Alta California. *California Archaeology* 4(2):247-256.

Frickstad, Walter N.
1955 *A Century of Post Offices: 1848-1954*. Philatelic Research Society, Oakland, CA. Electronic document, available at https://archive.org/details/centuryofcalifor00fric, accessed July 9, 2025.

Gallegos, Dennis R.
1985 Batiquitos Lagoon Revisited. *Casual Papers Cultural Resource Management* 2(1). Department of Anthropology, San Diego State University, California.

1987 A Review and Synthesis of Environmental and Cultural Material for the Batiquitos Lagoon Region. In *San Dieguito-La Jolla: Chronology and Controversy*, edited by Dennis Gallegos, pp. 23-34. San Diego County Archaeological Society, Research Paper 1.

1991 Antiquity and Adaptation at Agua Hedionda, Carlsbad, California. In *Hunter-Gatherers of Early Holocene Coastal California*, edited by Jon M. Erlandson and Roger H. Colten., pp. 19–42. Perspectives in California Archaeology, Vol. 1, Jeanne E. Arnold, series editor. Institute of Archaeology, University of California, Los Angeles.

Goldberg, Susan K.
2001 Land Use, Mobility, and Intensification Evaluation and Refinement of the Model. In *Metropolitan Water District of Southern California, Eastside Reservoir Project, Final Report of Archaeological Investigations, Volume IV: Prehistoric Archaeology Synthesis of Findings*, edited by Susan K. Goldberg, Chapter 14. Report prepared by Applied Earthworks, Hemet, California for Metropolitan Water District of Southern California, Los Angeles.

Grenda, Donn R.
1997 *Continuity & Change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore*. Statistical Research Technical Series 59, Tucson.

Gruen, J. Philip
1998 *Colorado River Aqueduct Recording Project*. Groucho Publications, Los Angeles.

Head, W.S.
1972 *The California Chaparral: An Elfin Forest*. Naturegraph, Healdsburg, California.

Hedges, Ken, and Christina Beresford
1986 *Santa Ysabel Ethnobotany*. San Diego Museum of Man Ethnic Technology Notes No. 20.

Helmich, Mary A.
2008 *The Butterfield Overland Mail Company*. California State Parks, Interpretation and Education Division.

Hoffman, Ogden
1862 Reports of Land Cases Determined in the United States District Court for the Northern District of California, Numa Hubert, San Francisco.

Hoover, Anna
2002a DPR site form update for P-33-011037 (CA-RIV-6648). Form on file at the South Coastal Information Center, San Diego State University.

2002b DPR site form update for P-33-011038 (CA-RIV-6649). Form on file at the South Coastal Information Center, San Diego State University.

2005 DPR site form update for P-33-011037. Form on file at the South Coastal Information Center, San Diego State University.

Horne, Melinda C, and Dennis P. McDougall
2008 *CA-RIV-6069: Early Archaic Settlement and Subsistence in the San Jacinto Valley. Western Riverside County, California*. Report prepared for and submitted to the Metropolitan Water District of Southern California. On file at the Eastern Information Center (EIC), Riverside.

Hunneman, John
2008 *French Valley: A storied past and still history in the making.* The San Diego Union Tribune. Electronic document available at https://www.sandiegouniontribune.com/sdut-french-valley-a-storied-past-and-still-history-in-2008apr20-story.html, accessed May 9, 2022.

Hyland, Justin R., and Maria De La Luz Gutierrez
1995 An Obsidian Fluted Point from Central Baja California. *The Journal of California and Great Basin Anthropology* 17(1): 126–128.

Jones, S. Carleton
1992 *Development of Cultural Complexity Among the* Luiseño. Unpublished Master's thesis, Department of Anthropology, California State University, Long Beach.

Jones, T.L., G.M. Brown, L.M. Raab, J.L. McVicker, W.G. Spaulding, D.L. Kent, A. York, and P. Walker
1999 Environmental Imperatives Reconsidered. Demographic Crises in Western North America during the Medieval Climatic Anomaly. *Current Anthropology* 40:137–170.

Keller, Jean A.
1988a DPR site form for P-33-017222. Form on file at the South Coastal Information Center, San Diego State University.

1988b DPR site form for P-33-017223. Form on file at the South Coastal Information Center, San Diego State University.

Keller, Jean Salpas, and Daniel F. McCarthy
1989 Data Recovery at the Cole Canyon Site (CA-RIV-1139), Riverside County, California. *Pacific Coast Archaeological Society Quarterly* 25(1):1-89.

Kennett, Douglas J., and James P. Kennett
2000 Competitive and Cooperative Responses to Climatic Instability in Coastal Southern California. *American Antiquity* 65:379–395.

Kline, George E., and Victoria L. Kline
2007 Fluted Point Recovered from San Diego County Excavation. *Proceedings of the Society for California Archaeology* 20:55–59.

Knell, Edward J., and Mark S. Becker
2017 Early Holocene San Dieguito Complex Lithic Technological Strategies at the C.W. Harris Site, San Diego, California. *Journal of California and Great Basin Anthropology* 37(2):183-201.

Koerper, Henry C., Paul E. Langenwalter II, and Adella Schroth
1991 Early Holocene Adaptations and the Transition Phase Problem: Evidence from the Allan O. Kelly Site, Agua Hedionda Lagoon. In *Hunter-Gatherers of Early Holocene Coastal California*, edited by Jon M. Erlandson and Roger H. Colton, pp. 43–62. Perspectives in California Archaeology, Vol. 1, Jeanne E. Arnold, series editor. Institute of Archaeology, University of California, Los Angeles.

Kremkau, Scott
2011 DPR site form for P-33-020732 (CA-RIV-10654). Form on file at the South Coastal Information Center, San Diego State University.

Kroeber, A. L.
1925 *Handbook of the Indians of California*. American Bureau of Ethnology Bulletin 78. Washington, D.C. Lithographed edition 1953, Third Printing 1970, California Book Company, LTD, Berkeley.

Lech, Steve
2004 *Along the Old Roads: A History of the Portion of Southern California That Became Riverside County, 1772–1893*. Steve Lech, Riverside, California

2012 *Pioneers of Riverside County: The Spanish, Mexican and Early American Periods*. Charleston, SC: The History Press

Masiel-Zamora, Myra Ruth
2013 *Analysis of 'Éxva Teméeku, A Luiseño Indian Village Site Named Temeku, Located in Temecula, California*. Master's thesis, Department of Anthropology, San Diego State University.

McCarthy, Daniel F.
1986 Archaeological Studies at Hi Card Ranch (CA-RIV-1806), Santa Rosa Plateau, Riverside, County, California. *Pacific Coast Archaeological Society Quarterly* 22(2):45-79.

1987 Archaeological Studies at Wildomar, CA-RIV-2769, Riverside, County, California. *Pacific Coast Archaeological Society Quarterly* 23(1):1-46.

McCown, B. E.
1955 *Temeku. A Page from the History of the Luiseño Indians*. Archaeological Survey Association of Southern California Paper No. 3.

McDougall, Dennis P.
2001 CA-RIV-5086/H. In *Metropolitan Water District of Southern California, Eastside Reservoir Project, Final Report of Archaeological Investigations, Volume II:* Archaic and Late Prehistoric Occupation Sites, edited by Susan K. Goldberg, Chap. 9. Prepared by Applied Earthworks, Hemet, California for Metropolitan Water District of Southern California, Los Angeles.

McKenna et al.
2003 A Phase I Cultural Resources Survey of Assessor Parcels 467-160-047 and 467-160-012, Comprising 20 Acres in Riverside County, California. Report on file at the South Coastal Information Center, San Diego State University.

Meighan, Clement W.
1954 A Late Complex in Southern California Prehistory. *Southwestern Journal of Anthropology* 10(2):215-227.

Miller, Wick R.
1986 Numic Languages. In *Great Basin*, edited by W. L. D'Azevedo, pp. 98–112. Handbook of North American Indians, Vol. 11. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Mills, James
1957 Journalistic Remarks on the Los Angeles and Tucson Mails. *San Diego Historical Society Quarterly* 3(3).

Moratto, Michael J.
1984 *California Archaeology*. Academic Press, Orlando.

Morton, D.M.
n.d. *Preliminary Geologic Map of the Winchester 7.5' Quadrangle, Riverside County, California, version 1.0*. United States Geological Survey.

Morton, D.M., and M.P. Kennedy
n.d. *Geologic Map of the Bachelor Mountain 7.5' Quadrangle, Riverside County, California, version 1.0*. United States Geological Survey.

Munz, Philip A.
1974 *A Flora of Southern California*. University of California Press, Berkeley.

National Park Service (NPS)
2024 *National Register Bulletin: Identifying, Evaluating, and Documenting Traditional Cultural Places*. National Park Service, Washington, D.C.

NETR Online
2025 *Historic Aerials*. Nationwide Environmental Title Research, LLC. Electronic document available at: http://www.historicaerials.com, accessed December 19, 2023.

O'Connell, James F, Philip J. Wilke, Thomas F. King and Carol L. Mix, editors
1974 *Perris Reservoir Archaeology: Late Prehistoric Demographic Change in Southeastern California*. Report prepared by the Archaeological Research Unit, Department of Anthropology, University of California, Riverside, California, for the State of California Department of Parks and Recreation.

Oxendine, Joan
1983 *The* Luiseño *Village During the Late Prehistoric Era.* Ph.D. dissertation, University of California, Riverside.

Pigniolo, Andrew R.
2001 Points, Patterns, and People: Distribution of the Desert Side-Notched Point in San Diego. *Proceedings of the Society for California Archaeology* 14:27–40.

2005 A Different Context: San Dieguito in the Mountains of Southern California. *Proceedings of the Society for California Archaeology* 18:255-262.

Price, James N.
1988 The Railroad Stations of San Diego County. In The Journal of San Diego History, Spring 1988, Volume 34, Number 2. San Diego Historical Society Quarterly.

Robinson, Mark C.
2001 Units of Analysis. In *Metropolitan Water District of Southern California, Eastside Reservoir Project, Final Report of Archaeological Investigations, Volume IV: Prehistoric Archaeology Synthesis of Findings*, edited by Susan K. Goldberg, Chapter 4. Prepared by Applied Earthworks, Hemet, California for Metropolitan Water District of Southern California, Los Angeles.

Rogers, Malcolm J.
1936 *Yuman Pottery Making.* San Diego Museum of Man Papers No. 2. San Diego Museum of Man.

1939 *Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas*. San Diego Museum of Man Papers No. 3. San Diego Museum of Man.

1966 *Ancient Hunters of the Far West*. Union-Tribune Publishing Company, San Diego.

Rogers, Thomas H.
1965 Geologic Map of California: Santa Ana Sheet. State of California Division of Mines and Geology. Fourth printing 1978.

Rolle, A. F.
1963 *California: A History*. Thomas Y. Crowell Company, New York, New York.

Rondeau, Michael F., James Cassidy, and Terry L. Jones
2007 Colonization Technologies: Fluted Projectile Points and the First Californians. In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar. AltaMira Press, Lanham, Maryland.

Roy, Julie
2013a DPR site form update for P-33-013871 (CA-RIV-11964). Form on file at the South Coastal Information Center, San Diego State University.

2013b DPR site form update for P-33-020732 (CA-RIV-10654). Form on file at the South Coastal Information Center, San Diego State University.

Shipek, Florence C.
1977 *A Strategy for Change. The Luiseño of Southern California*. Ph.D. dissertation, University of Hawaii. University Microfilms International, Ann Arbor, Michigan.

Smallwood, Josh
2006 DPR site form update for P-33-011038 (CA-RIV-6649). Form on file at the South Coastal Information Center, San Diego State University.

2014 DPR site form update for P-33-020551 (CA-RIV-10452H). Form on file at the South Coastal Information Center, San Diego State University.

Soboba Band of Luiseño Indians
n.d. History, Sovovatum, The People of Soboba. Electronic document, available at https://www.soboba-nsn.gov/about-us.

Sparkman, Philip Stedman
1908 The Culture of the Luiseño Indians. *University of California Publications in American Archaeology and Ethnology* 8(4):187-234.

Stanton, Patrick
2011 DPR site form for P-33-020551 (CA-RIV-10452). Form on file at the Eastern Information Center, UC Riverside, California.

State Lands Commission
1982 *Grants of Land in California Made by Spanish or Mexican Authorities*. Boundary Determination Office, State Lands Commission, Boundary Investigation Unit.

Stine, S.
1994 Extreme and Persistent Drought in California and Patagonia during Mediaeval Time. *Nature* 369:546–549.

Stott, Kenhelm W.
1968 Fifty Years of Stagecoaching in Southern California. In *Brand Book Number One,* edited by R. Brandes. The San Diego Corral of the Westerners, California

Strong, William D.
1929 *Aboriginal Society in Southern California.* University of California Publications in American Archaeology and Ethnology 26(1):1–358. Berkeley.

Sutton, Mark Q., and Don R. Grenda
2012 Defining Level 1 at Malaga Cove (CA-LAN-138), Alta California. *California Archaeology* 4(1): 123–144.

Sutton, Mark Q., and Jill K. Gardner
2010 Reconceptualizing the Encinitas Tradition of Southern California. *Pacific Coast Archaeological Society Quarterly*, 42(4)1–64.

Sutton, Mark Q., Mark E. Basgall, Jill K Gardner, and Mark W. Allen
2007 Advances in Understanding Mojave Desert Prehistory. In *California Prehistory: Colonization, Culture, and Complexity,* edited by Terry L. Jones and Kathryn A. Klar, pp. 229-246. AltaMira Press, Lanham, Maryland.

Talley, R. Paige
1982 *The Life History of a Luiseño Indian: James (Jim) Martinez*. Unpublished Master's thesis, Department of Anthropology, San Diego State University.

True, D.L.
1958 An Early Complex in San Diego County, California. *American Antiquity* 23(3): 255–263.

1980 The Pauma Complex in Northern San Diego County: 1978. *Journal of New World Archaeology* 3(4): 1–30. Institute of Archaeology, University of California, Los Angeles.

1990 Site Locations and Water Supply: A Perspective from Northern San Diego County, California. *Journal of New World Archaeology* 7(4):37-60. Institute of Archaeology, University of California, Los Angeles.

True, D. L., and Paul D. Bouey

1990 Gladishill: A Probable San Dieguito Camp Near Valley Center, California. *Journal of New World Archaeology* 7(4): 1-28.

True, D. L., Clement W. Meighan, and Harvey Crew

1974 *Archaeological Investigations at Molpa, San Diego County, California.* University of California Publications in Anthropology, Vol 11.

University of California, Santa Barbara (UCSB) Digital Library

2025 UCSB Frame Finder. University of California, Santa Barbara Digital Library. Electronic Resource available at https://mil.library.ucsb.edu/ap_indexes/FrameFinder/, accessed May 17, 2022.

Vaughan, Sheila J.

1982 *A Replicative Systems Analysis of the San Dieguito Component at the C.W. Harris Site.* Master's thesis, Department of Anthropology, University of Nevada, Las Vegas.

Wallace, William J.

1955 A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology* 11:214-230.

Ward, J. W.

1967 The Cahuilla: A Historical-Anthropological Study of a Southern California People. Los Angeles, California.

Warren, Claude N.

1967 The San Dieguito Complex: A Review and Hypothesis. *American Antiquity* 32:168-185.

1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. In *Archaic Prehistory in the Western United States*, edited by C. Irwin-Williams, pp. 1–14. Eastern New Mexico Contributions in Anthropology 1(3). Portales, New Mexico.

1984 The Desert Region. In *California Archaeology*, edited by M. J. Moratto, pp. 339–430. Academic Press, Orlando, Florida.

Warren, Claude N. (editor)

1966 *The San Dieguito Type Site: M. J. Rogers' 1938 Excavation on the San Dieguito River*. San Diego Museum Papers No. 5. San Diego Museum of Man.

Warren, Claude N., and D.L. True
1961 The San Dieguito Complex and Its Place in San Diego County Prehistory. *Archaeological Survey Annual Report*, 1960-1961, pp. 246-291. University of California, Los Angeles.

Warren, Claude N., and H.T. Ore
2011 The Age of the San Dieguito Artifact Assemblage at the C. W. Harris Site. *Journal of California and Great basin Anthropology* 31(1):81-97.

Warren, Claude N., Gretchen Siegler, and Frank Dittmer
2008 Paleoindian and Early Archaic Periods. In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. Prepared for the Metropolitan Wastewater Department, City of San Diego by ASM Affiliates, Encinitas, California.

Weber, David
1992 *The Spanish Frontier in North America*. Yale University Press.

White, Raymond C.
1963 Luiseño Social Organization. *University of California Publications in American Archaeology and Ethnology* 48(2):91-194.

Wilke, Philip
1974 Settlement and Subsistence at Perris Reservoir: A Summary of Archaeological Investigations. In *Perris Reservoir Archaeology,* edited by James F. O'Connell, Philip J. Wilke, Thomas F. King, Carol L. Mix, pp. 20–30. California Department of Parks and Recreation Reports No. 14. Sacramento.

1978 *Late Prehistoric Human Ecology at Lake Cahuilla, Coachella Valley, California*. Contributions of the University of California Archaeological Research Facility No. 38. University of California, Riverside.

Appendix A

Resumes of Key Personnel

EDUCATION

Bachelor of Arts, Anthropology, California State College, Long Beach, 1970

Master of Arts, Anthropology, California State University, Los Angeles, 1982

REGISTRATIONS/ CERTIFICATIONS

Register of Professional Archaeologists No. 10621

City of San Diego, Certified Principal Investigator for Monitoring Projects

County of San Diego, Approved Consultant for Archaeological Resources

County or Riverside, Certified Cultural Resources Consultant Principal Investigator

County of Orange, Certified Cultural Resources Consultant Principal Investigator

Los Angeles, Ventura, San Luis Obispo, and Santa Barbara Approved Consultant

PROFESSIONAL AFFILIATIONS

Society for California Archaeology

Society for American Archaeology

THEODORE COOLEY, RPA

Senior Archaeologist

Mr. Cooley has 50 years of experience in archaeological resource management. He has directed test and data recovery investigations, monitoring programs, and archaeological site surveys of large and small tracts, and has prepared reports for various cultural resource management projects. He is well-versed in National Historic Preservation Act, National Environmental Policy Act (NEPA), and California Environmental Quality Act (CEQA) regulations and processes. Mr. Cooley's experience also includes Native American consultation for monitoring of archaeological field projects, including some with human remains and reburial-related compliance issues.

Sycamore Canyon/Goodan Ranch Public Access Plan IS/MND. Senior Archaeologist for Phase I pedestrian survey and cultural resource inventory in support of the preparation by the County of San Diego County Parks Department of a Public Access Plan for the Sycamore Canyon/Goodan Ranch Preserve located in coastal foothills of unincorporated west-central San Diego County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the County of San Diego.

Sycuan/Sloane Canyon Trail IS/MND. Senior Archaeologist for Phase I pedestrian survey and cultural resource inventory in support of the preparation by the County of San Diego County Department of a Parks and Recreation for the Sycuan/Sloane Canyon Trail project located in the coastal foothills of unincorporated southwestern San Diego County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the County of San Diego.

R.M. Levy Water Treatment Plant Sewer Replacement. Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory and assessment program in support of a water treatment plant, sewer pipeline, replacement project, located in the community of Lakeside, San Diego County. Involvement included participation in the analysis of the results from the survey program and preparation of the technical report. Work performed for HELIX Water District.

Hiser Property Project. Senior Archaeologist for a due diligence study prepared to summarize potential cultural resources constraints to the 9.2-acre Hiser Property development project, located in the Mission Gorge area of the City of Santee, San Diego County. The study consisted of background research including a record search and limited archival study, a field survey, and a review of the Sacred Lands File from the Native American Heritage Commission (NAHC). Involvement included participation in the analysis of the results and preparation of a summary letter report of the potential cultural resources-related constraints to the planned development. Work performed for KB Home.

San Elijo Joint Powers Authority Roadway and Trail Addendum and Permitting. Senior Archaeologist for Phase I cultural resource inventory, pedestrian survey, and resource testing at the San Elijo Water Reclamation Facility adjacent to San Elijo

lagoon, in San Diego County, in support of the preparation by the San Elijo Joint Powers Authority of a Roadway and Trail Addendum for upgrades to the facility requiring verification of Nationwide Permit authorization from the U.S. Army Corps of Engineers (USACE). Involvement included participation in the analysis of the results from the survey and testing program and co-authorship of the technical report. Work performed as a subconsultant to Kimley-Horn & Associates, with the San Elijo Joint Powers Authority as lead agency.

Cubic Redevelopment Environmental Consulting. Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory and assessment program in support of a 20-acre redevelopment project, located in the community of Kearny Mesa, City of San Diego. Involvement included participation in the analysis of the results from the survey program and preparation of the technical report. Work performed for Cubic Redevelopment Environmental Consulting, with the City of San Diego as lead agency.

The Enclave at Delpy's Corner Project. Senior Archaeologist for a cultural resources monitoring and data recovery program in support of a proposed 124-unit townhome development project, in the City of Vista, San Diego County. Involvement included participation in the analysis of the prehistoric lithic artifacts and preparation of technical report sections containing the results of these analyses. Work performed for CalAtlantic Homes.

Sycamore & Watson Project. Senior Archaeologist for an archaeological construction monitoring program for the Sycamore & Watson residential development project, located in City of Vista, San Diego County. Involvement included participation in the analysis of the results from the monitoring program and preparation of the technical report. Work performed for Meritage Homes.

French Valley 303 Project. Senior Archaeologist for an archaeological construction monitoring program for the French Valley 303 Site residential development project, located in the French Valley area of unincorporated Riverside County. Involvement included participation in the analysis of the results from the monitoring program and co-authorship of the technical report. Work performed for Pulte Home Co., LLC.

Brown Field and Montgomery-Gibbs Executive Airport Master Plans. Senior Archaeologist for Phase I cultural resource inventory and pedestrian survey programs at the Brown Field Municipal Airport and the Montgomery-Gibbs Executive Airport, in the City of San Diego, in support of updating of the Airport Master Plan and its Programmatic Environmental Impact Report. Involvement included participation in the analysis of the results from the survey programs and co-authorship of the technical reports. Work performed as a subconsultant to C&S Companies, with the City of San Diego as the lead agency.

Newage Carlsbad Luxury Resort Technical Studies. Senior Archaeologist for a cultural resources assessment study for the Ponto Hotel development project in the City of Carlsbad, San Diego County, California. Involvement included participation in the analysis of the results from the assessment program and preparation of the technical report. Work performed for Kam Sang Company, with the City of Carlsbad as the lead agency.

Salt Bay Design District Specific Plan EIR. Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory program in support of the 46.6-acre Salt Bay Design District Specific Plan mixed-use wholesale/retail shopping and light industrial development project, in the cities of San Diego and Chula Vista. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for M. & A. Gabaee, with the City of San Diego as lead agency.

Riverside Views and Briggs Road Development Project. Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory program of the Briggs Road Residential project located in Riverside County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the Walton International Group, LLC.

San Jacinto Property Project. Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory program of the 214 residential project located in Riverside County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the Walton International Group, LLC.

8016 Broadway Self Storage Project. Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory program of the Lemon Grove Self-Storage project located in the City of Lemon Grove, San Diego County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the Summit Environmental Group, Inc.

MARY ROBBINS-WADE, RPA

Principal Cultural Resources Specialist

EDUCATION

Master of Arts, Anthropology, San Diego State University, 1990

Bachelor of Arts, Anthropology, University of California, Santa Barbara, 1981

REGISTRATIONS/ CERTIFICATIONS

Registered Professional Archaeologist No. 10294

Caltrans, Professionally Qualified Staff-Equivalent Principal Investigator for Prehistoric Archaeology

Bureau of Land Management Statewide Cultural Resource Use Permit, FLPMA Permit No. CA-25-10 (expires 10/23/2027)

County of San Diego, CEQA Consultant List – Archaeological Resources

Orange County Approved Archaeologist

Riverside County Approved Cultural Resources Consultant

PROFESSIONAL AFFILIATIONS

Society for American Archaeology

Society for California Archaeology

San Diego Archaeological Center

San Diego History Center

San Diego Museum of Us

San Diego County Archaeological Society



Ms. Robbins-Wade is a HELIX Cultural Resources Group Manager, Principal Archaeologist, and Senior Project Manager. With 45 years of experience, she manages and oversees archaeological, historic, and interpretive studies and programs, including contract management; design and implementation of survey, research, data recovery, and construction monitoring programs; preservation plans and report preparation. Ms. Robbins-Wade has experience with a broad range of project types, including private developments and public infrastructure. She manages the preparation of cultural resources studies both as stand-alone reports and also in support of CEQA and NEPA compliance efforts. Ms. Robbins-Wade has a strong working knowledge of local, state, and federal laws addressing the protection of archaeological and historical resources. Her Native American consultation experience includes coordinating Native American tribal consultations conducted pursuant to CEQA as revised by Assembly Bill 52 (2014 Session), as well as providing support for federal agency government-to-government consultations with federally recognized tribes pursuant to Section 106 of the National Historic Preservation Act (NHPA). Ms. Robbins-Wade is a Registered Professional Archaeologist (RPA) and meets the U.S. Secretary of the Interior's Professional Qualifications for prehistoric and historic archaeology.

One Alexandria Square Environmental Consulting (2019 - 2022). Principal Investigator/Cultural Resources Lead for a cultural resources study for a redevelopment project of existing office/scientific research uses to include additional office/lab space (including underground parking), a parking structure, and retail uses. Due to the presence of a known significant archaeological/cultural resource, responsibilities included researching previous archaeological studies, working with the project team to design the project so as to preserve over 75 percent of the significant resource, developing a research design and data recovery plan to mitigate impacts that could not be avoided through project design, and listing the resource on the City's Historical Landmarks list, as well as serving as senior report author.

Vista Vineyards (2014 - 2015). Project Manager/Principal Investigator in a cultural resources survey and testing program for a proposed residential development in the City of Vista. The 15.2-acre project is located along Buena Vista Creek, in an area that is culturally sensitive to the Luiseño people, and two archaeological sites within the project had previously been assessed as significant cultural resources. Oversaw background research, field survey, testing, recording archaeological sites, Native American outreach and coordination, and report preparation. The aim of the cultural resources study was to supplement the previous testing work, in order to guide the data recovery program at one site and to develop a preservation plan for the second site. In addition, the project included a historic study to provide the context and framework for recording a historic archaeological site associated with a significant pioneering family in Vista. Due to the project's location and the known significant

cultural resources, the cultural resources study included outreach and coordination with the Luiseño community. The project addresses preservation of the significant resources. Work performed for City of Vista.

Valiano Project (2015 - 2015). Project Manager/Principal Investigator for a cultural resources survey and testing project for a proposed residential development in the County of San Diego. Oversaw background research, field survey and testing, Native American coordination, report preparation, and development of a data recovery plan. Managed coordination and field meetings with both Kumeyaay and Luiseño representatives. The study included historic structures evaluation, as well as archaeological research. Work performed for Integral Partners Funding, LLC.

Otay Crossings Commerce Park EIR (2016 - 2019). Project Manager/Principal Investigator for a cultural resources program including testing, data recovery, and monitoring for a 311.5-acre project in the County of San Diego. Served as Project Manager/Principal Investigator for the cultural resources study that addressed 14 sites, including testing at the 10 sites that had not been previously assessed. Work performed for Kearny PCCP Otay 311, LLC, with County of San Diego as the lead agency.

Lilac Hills Ranch (2014 - 2017). Project Manager/Principal Investigator of a cultural resources survey and testing program for an approximately 608-acre mixed-use development in the Valley Center area. Oversaw background research, field survey, testing, recording of archaeological sites and historic structures, and report preparation. Responsible for development of the research design and data recovery program, preparation of the preservation plan, and Native American outreach and coordination. The project also included recording historic structures, development of a research design and data recovery program for a significant archaeological site, and coordination with the Native American community and the client to develop a preservation plan for a significant cultural resource. The project changed over time, so additional survey areas were included, and a variety of off-site improvement alternatives were addressed. Work performed for Accretive Investments, Inc. with County of San Diego as the lead agency.

Mission Cove Data Recovery (2014 - 2015). Project Manager/Principal Investigator for a cultural resources data recovery program at a significant archaeological site with cultural significance to the Luiseño people in the City of Oceanside. Prior to the data recovery program, worked with the client and the San Luis Rey Band of Mission Indians to redesign the project (an affordable housing/mixed-use development) to avoid impacts to cultural resources to the extent feasible. Oversaw background research, excavation and related fieldwork, cataloging and analysis, coordination of ancillary studies (e.g. radiocarbon analysis and shell analysis), Native American coordination, and report preparation. The data recovery program was conducted to mitigate impacts that could not be avoided through project design. Work performed for National Community Renaissance.

EMWD Lake Skinner Regional Water Transmission System (EM-11) Program EIR (2021 - Present). Principal Archaeologist for a project that includes three main components: a new service connection (turnout) to receive treated water deliveries from Metropolitan Water District of Southern California's Robert A. Skinner Water Treatment Plant (WTP); a new pump station that would connect to the turnout to supply water to the district's service area; and a new transmission pipeline. The project is in an area that is sensitive for cultural resources and Tribal Cultural Resources. Overseeing background research, field surveys, report preparation, and Native American outreach and coordination. Work performed for EMWD.

EMWD Judson Potable Water Storage Tank and Transmission Pipeline IS/MND (2016 - 2019). Cultural Resources Task Lead for this project in the City of Moreno Valley. Eastern Municipal Water District proposed the construction and operation of a steel, 2.2-million-gallon (MG) potable water storage tank, approximately 2,300 linear feet of 18-inch-diameter transmission pipeline, a paved access road, a detention basin, and other appurtenances to support tank operations. Oversaw background research and field survey. Responsible for Native American outreach for cultural resources survey and co-authored technical report. Assisted District with

Native American outreach and consultation under AB 52. Work performed under an as-needed contract for Eastern Municipal Water District.

EMWD Fox Tank Replacement IS/MND (2017 - 2018). Cultural Resources Task Lead for this project in the Mead Valley community of unincorporated Riverside County. Eastern Municipal Water District proposed to construct and operate a new 1.0-million-gallon (MG) welded steel water tank and 0.15-MG detention basin, install a new 12-inch-diameter pipeline within Fox Street and Ellis Road to connect the new tank to the existing water distribution network, and demolish the existing 0.15-MG Orange Tank. Oversaw background research, field survey, and report preparation. Responsible for Native American outreach for cultural resources survey. Assisted District with Native American outreach and consultation under AB 52. Work performed under an as-needed contract for Eastern Municipal Water District.

EMWD Cactus II Feeder Transmission Pipeline IS/MND (2017 - 2018). Cultural Resources Task Lead for this project in the City of Moreno Valley. Eastern Municipal Water District proposed to construct approximately five miles of new 30-inch to 42 inch-diameter pipeline; the project would address existing system deficiencies within the City and provide supply for developing areas. Oversaw background research, field survey, and report preparation. Responsible for Native American outreach for cultural resources survey. Assisted District with Native American outreach and consultation under AB 52. Work performed under an as-needed contract for Eastern Municipal Water District.

EMWD Sky Canyon Sewer Environmental Consulting (2018 - 2019). Cultural Resources Task Lead for this project adjacent to the City of Murrieta in southwestern Riverside County. Eastern Municipal Water District proposed to implement the Sky Canyon Sewer Main Extension Project to construct approximately 6,700 linear feet of new gravity-fed 36-inch-diameter sewer main to provide additional sewer capacity for planned development. The proposed 36-inch-diameter sewer main would extend the existing 36-inch-diameter French Valley Sewer at Winchester Road further downstream to Murrieta Hot Springs Road. Oversaw background research and field survey for the cultural resources study in support of the IS/MND. Responsible for Native American outreach for cultural resources survey and co-authored technical report. Assisted District with Native American outreach and consultation under AB 52. Work performed under an as-needed contract for Eastern Municipal Water District.

EMWD Purified Water Replenishment EIR (2020 - 2021). Cultural Resources Task Lead for a project that would replenish the San Jacinto Upper Pressure Groundwater Management Zone aquifer with advanced treated water. New facilities are proposed to include advanced water treatment facilities and brine ponds near EMWD's existing San Jacinto Valley Regional Water Reclamation Facility, a blending facility at the existing Alessandro Ponds, and water conveyance pipelines. Oversaw background research, field survey, and report preparation and was responsible for Native American outreach and coordination. Work performed for EMWD.

EMWD Ridgecrest Road Tank Site EIR (2023 - Present). Principal Archaeologist for the project, which includes construction of an above-ground water tank, connecting pipeline, and access road located within unincorporated land in Riverside County. Oversaw the preparation of the initial cultural resources constraints analysis report that assessed seven alternative locations for the water tank, as well as the field survey of the preferred alternative. Met with tribal representatives in the field to discuss the cultural significance of the project area. Future tasks include preparation of a Cultural Resources Technical Report and coordination with Native American Tribes per AB 52. Work performed for EMWD.

EVMWD Highway 74/Ethanac Sewer Extension (2023 - Present). Cultural Resources Task Lead/Principal Investigator for a cultural resources study and technical report for this project in a culturally sensitive area of western Riverside County. Worked with the Pechanga Band of Luiseño Indians to address this cultural sensitivity in the technical report and mitigation measures, as well as working with the Cahuilla Band of Indians, who also

expressed cultural concerns. Work performed for Kennedy Jenks Consultants with Elsinore Valley Municipal Water District (EVMWD) as the lead agency.

EVMWD Horsethief Canyon Water Reclamation Facility (2022 - 2023). Project Manager/Principal Investigator for archaeological monitoring for this project in the culturally sensitive Temescal Valley. Archaeological monitors worked closely with tribal monitors from Soboba and Pechanga.

EVMWD Diamond Regional Lift Station and Pipeline Project (2016 - 2018). Cultural Resources Task Lead/Principal Investigator for a cultural resources survey of the proposed Diamond Regional Lift Station project in the City of Lake Elsinore, located at the confluence of the San Jacinto River at the eastern shoreline of Lake Elsinore. Oversaw background research, field survey, site record updates, Native American coordination, and report preparation. Coordinated with Pechanga Cultural Resources on Native American concerns and development of mitigation measures for the project. Work performed for Elsinore Valley Municipal Water District (EVMWD).

EVMWD Regional Agricultural Pipeline Conversion Project (2016 - 2018). Cultural Resources Task Lead for the cultural resources study and archaeological monitoring for the proposed Ag Pipeline Conversion project, a three-agency partnership between Elsinore Valley Municipal Water District (EVMWD), the City of Lake Elsinore, and the Riverside County Flood Control and Water Conservation District (RCFCWCD). In conjunction with the cultural resources study, met with Pechanga Cultural Resources staff several times to discuss Native American concerns and alternative project approaches, due to the presence of extremely sensitive cultural resources. Assisted EVMWD with AB 52 consultation. Worked closely with tribal cultural monitors from two Tribes during construction monitoring. Work performed for EVMWD.

EVMWD Palomar Well Replacement Project (2018). Cultural Resources Task Lead/Principal Investigator for a cultural resources survey of a proposed well replacement site in the City of Wildomar. Oversaw background research and field survey; responsible for Native American coordination and report preparation. Work performed EVMWD.

EVMWD Lee Lake Wells (2019 - 2021). Cultural Resources Task Lead/ Principal Investigator for cultural resources survey for a well project in the Temescal Valley. Project Manager for archaeological monitoring during geotechnical investigations for the project. Worked closely with Pechanga and Soboba, due to the location of the project within a traditional cultural landscape and the cultural sensitivity of the area.

EVMWD Diamond Regional Sewer Lift Station and Dual Force Mains Project Archaeological Testing (2021 - 2022). Project Manager/Principal Investigator for archaeological testing to assess the status of a significant cultural resource in relation to the project facilities. Worked closely with Pechanga and Soboba, EVMWD staff, and State Water Boards staff to address the presence of Traditional Cultural Properties/Tribal Cultural Resources and to develop treatment measures for these resources.

Jackson Street Recycled Water Pipeline Project (RPU - SWRCB Financial Application Water Recycling Funding Program) (2017). Cultural Resources Task Lead/Principal Investigator for the proposed installation of pipelines to expand the City of Riverside's Recycled Water System. Managed completion of a records search and a Sacred Lands File search, tribal outreach, a review of historic maps and aerial photographs, an intensive field survey by a HELIX archaeologist, and co-authored the draft and final reports. The study met the CEQA+ requirements of the SWRCB for receiving SRF. Work performed as a subcontractor to Kennedy Jenks, with the City of Riverside as the lead agency.

EDUCATION
Master of Arts, Anthropology, San Diego State University, 2018

Bachelor of Arts, Biology and Anthropology, San Diego State University, 2015

REGISTRATIONS/ CERTIFICATIONS
Registered Professional Archaeologist No. 17338

PROFESSIONAL AFFILIATIONS
Society for Historical Archaeology

Society for California Archaeology

JAMES TURNER

Senior Archaeologist I



Mr. Turner is a Registered Professional Archaeologist (RPA) with a Master's degree in Anthropology and field and college-level teaching experience in archaeology. He has five years of experience in Section 106, the Native American Graves Protection and Repatriation Act (NAGPRA), and writing detailed reports. Mr. Turner has archaeological research and fieldwork expertise throughout southern California. He has also received training in identifying and analyzing animal remains in archaeological contexts, historic artifact identification, and technical writing. Mr. Turner's experience meets the Secretary of the Interior's Professional Qualification Standards for archaeology.

East County Advanced Water Purification Package 1-4 Project Level CEQA Coordination and Support (2022 - Present). Archaeologist for the Padre Dam Municipal Water District East County Advanced Water Purification (AWP) Project. Provided as-needed support to the East County AWP Joint Powers Authority (JPA), which is implementing the East County AWP project, in completing reviews of design documents, including review of available plans and other documents for accuracy, consistency, and adherence to the project's mitigation measures and permit conditions in regard to cultural resources. Conducted background and archival research and a pedestrian survey, and prepared a project-specific cultural resources inventory and assessment in support of project-specific Supplemental IS/MND tiered from the Facilities Master Plan Program EIR. Additionally, assisted in the development of a project-specific cultural resources field recordation program to be used during the cultural resources monitoring, and conducted cultural resources monitoring of construction activities. Work performed as a subconsultant, with Padre Dam Municipal Water District as the lead agency and Helix Water District, the County of San Diego, and the City of El Cajon as participating agencies and the East County AWP Joint Powers Authority (JPA).

Metropolitan Pure Water Southern California Program (2022 - 2025). Archaeologist for the technical analysis conducted in support of an EIR. The proposed Pure Water Southern California Program is a partnership between Metropolitan and the Los Angeles County Sanitation Districts to beneficially reuse water currently discharged to the Pacific Ocean. The proposed facilities would be located in Los Angeles County, spanning from approximately two miles north of the Port of Los Angeles to the foot of the San Gabriel Mountains. Conducted records searches and archival research, participated in intensive pedestrian surveys, prepared the Cultural Resources Technical Report, and assisted in the preparation of the Cultural Resources chapter of the Draft EIR.

EMWD Purified Water Replenishment Environmental Impact Report (2020 - 2021). Archaeologist for a pedestrian survey in the City of San Jacinto, CA. Conducted background research and prepared the technical report. Work performed for Eastern Municipal Water District.

EMWD Lake Skinner Regional Water Transmission System (EM-11) Program EIR (2022 - Present). Archaeologist for a project that includes a new service connection (turnout) to receive treated water deliveries from Metropolitan's Robert A. Skinner Water Treatment Plant; a new pump station that would connect to the turnout to supply water to the Eastern Municipal Water District's service area; and a new transmission pipeline. The project is in an area that is sensitive for cultural resources and Tribal Cultural Resources. Conducted archaeological records search, background research, and constraints analysis, and prepared the Cultural Resources Technical Report. Work performed for Eastern Municipal Water District.

EMWD Ridgecrest Road Tank Site EIR (2023 - Present). Archaeologist for the construction of an above-ground water tank, connecting pipeline, and access road located within unincorporated land in Riverside County. Conducted archaeological records search and background research and prepared an initial cultural resources constraints analysis report that assessed seven alternative locations for the water tank, as well as the field survey of the preferred alternative. Work performed for Eastern Municipal Water District.

Water Infrastructure Finance and Innovation Act Application State Historic Preservation Officer Response (2022). Archaeologist for the preparation of an archaeological sensitivity assessment to support Helix Water District's Water Infrastructure Finance and Innovation Act application and the U.S. Environmental Protection Agency's consultation with the California State Historic Preservation Officer for six pipeline improvement projects located within the cities of La Mesa and El Cajon and the community of Lakeside. Conducted archival research and assessed pipeline improvement projects for archaeological and historical sensitivity.

Dam Maintenance Program (2020 - 2022). Archaeologist for the City of San Diego Public Utilities Department Dam Maintenance Program, which covers routine maintenance activities of 13 dams and spillways, associated infrastructure, and the approximately 13-mile Dulzura Conduit, located in San Diego County. Conducted archival research and assisted in the preparation of the Cultural Resources Technical Report.

EMWD Warm Springs Lift Station Replacement (2020). Archaeologist for a cultural resources survey of this lift station replacement project in Temecula. The project is adjacent to Murrieta Creek, in an area that is of cultural significance to the Luiseño people. Conducted background research and prepared the draft technical report. Work performed for Eastern Municipal Water District.

EMWD Sky Canyon Sewer Main Extension (2021 - 2023). Archaeologist for a cultural resources study for a proposed sewer pipeline project in the County of Riverside. Responsibilities included cultural resource monitoring, identification of cultural material and features, photographs, and field notes. Work performed for Eastern Municipal Water District.

EVMWD Lee Lake Dam Upgrades (2020 - 2021). Archaeologist for cultural resources monitoring during geotechnical investigations for proposed upgrades to this historic dam in the culturally sensitive Temescal Valley. The project is within an area identified as a Traditional Cultural Property/Tribal Cultural Resource. Conducted cultural resources monitoring. Work performed for Eastern Municipal Water District.

EVMWD Near Term Water Supply Program, On-call Professional Environmental Services (2020 - 2025). Archaeological Monitor for the Agricultural Pipeline Conversion project, a three-agency partnership between the Elsinore Valley Municipal Water District (EVMWD), the City of Lake Elsinore, and the Riverside County Flood Control and Water Conservation District. The cultural resources monitoring program entailed working closely with tribal cultural monitors from two tribes, as well as coordination with construction crews and the construction management firm. Work performed for an on-call services contract to provide environmental services for water supply projects for the Elsinore Valley Municipal Water District.

EVMWD On-Call Environmental Support Services (2020 - 2024). Archaeologist for an on-call services contract to provide environmental services for water supply projects. Conducted archaeological records search. Work performed for the Elsinore Valley Municipal Water District

RCTC Downtown Riverside Metrolink Station Track & Platform Project (2020 - 2023). Archaeologist for the construction of an additional rail platform and tracks and extension of an existing pedestrian bridge at the existing Riverside-Downtown Station, Riverside. Assisted with report preparation. Work performed for the Riverside County Transportation Commission.

Painted Hills (2020). Archaeologist for a proposed bridge repair program in the Temescal Valley area in Riverside County. Prepared the Phase IV cultural resources monitoring report. Work performed for KB Home.

Temescal Canyon - TR 37153 (2020). Archaeologist for a due diligence constraints assessment related to cultural resources for an approximately 14.8-acre property located in an unincorporated area of Riverside County, California. Performed constraints assessment and produced a due diligence report. Work performed for KB Home.

Wasson Canyon Project (2020). Archaeologist for a due diligence constraints assessment related to cultural resources for an approximately 74.6-acre property located in the City of Lake Elsinore, Riverside County, California. Performed constraints assessment and produced a due diligence report. Work performed for KB Home.

Rosetta Hills Project (2020). Archaeologist for a due diligence constraints assessment related to cultural resources for an approximately 49.6-acre property located in the City of Lake Elsinore, Riverside County, California. Performed constraints assessment and produced a due diligence report. Work performed for KB Home.

Banner Park Residential Development (2020 - 2021). Archaeologist for an 82-acre residential development project located in Menifee, Riverside County, California. Assisted with the production of the Cultural Resources Monitoring Plan and monitored grading and rock breaking activities within the project area. Work performed for Pulte Homes.

Pure Water San Diego Conveyance Project (2021 - 2024). Archaeologist providing support for environmental compliance under the construction management contract for the first phase of the Pure Water San Diego Program, a multi-year program that will provide one-third of San Diego's water supply locally by 2035. The North City Project is the first phase initiated by the City of San Diego Public Utilities Department and involves upgrades to existing facilities and construction of new pump stations and pipelines. Prepared the Cultural Resources Monitoring and Treatment Plan for the North City Project Construction Packages, and prepared the Cultural Resources Work Plans for six project packages. Additionally, conducted cultural resources monitoring.

Unencased Transmission Main Replacement Initial Study/PEIR Addendum (2023 -2024). Senior Archaeologist for the replacement of two potable water transmission mains within the unincorporated community of Blossom Valley, in eastern San Diego County. Conducted a records search, contacted the Native American Heritage Commission for a Sacred Lands File Search, and prepared a Cultural Resources Technical Report. Work performed for the Padre Dam Municipal Water District.

Coronado Strand Main Replacement (2020). Archaeologist for a 46,300 linear-foot water main replacement in the City of Coronado. Conducted archival research and prepared the cultural resource survey report. Work performed as a subconsultant for California American Water Company, with the City of Coronado as the lead agency.

EDUCATION
Bachelor of Arts, Anthropology, concentration in Archaeology, University of California, San Diego, 2013

REGISTRATIONS/ CERTIFICATIONS
Technical Safety Institute, HAZWOPER 40 Hour, Hazardous Waste Operations and Emergency Response, Issue No. F183292

MARY VILLALOBOS

Assistant Archaeological Field Director



Ms. Villalobos serves as a field archaeologist on a number of cultural resource projects in southern California, including surveys, testing programs, and monitoring. She has also served as a laboratory assistant for major universities, museums, and archaeological centers. She has nine years of expertise in cultural resource surveying, cataloging site excavation data, and monitoring. Ms. Villalobos' experience includes international work for a key archaeological project in Peru focused on a temple excavation.

The Enclave at Delpy's Corner Project (2018 - 2019). Staff Archaeologist for a monitoring and data recovery program for a residential development project located in a culturally sensitive area in the City of Vista, CA. Responsibilities included coordination with construction crew and Native American monitors, field monitoring, daily field notes, excavation of shovel test pits and half units, identification of cultural material and features, taking GPS points, notes for test pits and half units, laboratory analysis and residue testing, generation of artifact tables, photographs, and assist with report. Work performed for CalAtlantic Homes.

SR-203 Sidewalk Improvements (N. Main Street and W. Minaret Road) (2017). Staff Archaeologist for a cultural resources testing and data recovery project for a proposed sidewalk improvement project in the City of Mammoth Lakes, CA. Responsibilities included excavation of shovel test pits and units, identification and recovery of cultural resources, notes and unit drawings, and photographs. Work performed for Triad Holmes Associates.

Buena Vista Apartments Project-Cultural Resources Services (2018 - 2019). Staff Archaeologist for monitoring and data recovery for a residential housing project in the City of Vista. Project is located on an important archaeological site. Responsibilities included screening, sorting gravel from wet screening, identification and recovery of cultural resources, monitoring grading activities, and photographs. Work performed for Monarch Group.

EMWD Lake Skinner Regional Water Transmission System (EM-11) Program EIR (2022 - Present). Staff Archaeologist for a cultural resources survey for a proposed project that includes three main components: a new service connection (turnout) to receive treated water deliveries from Metropolitan Water District of Southern California's Robert A. Skinner Water Treatment Plant (WTP); a new pump station that would connect to the turnout to supply water to the district's service area; and a new transmission pipeline. The survey included two alternative alignments located in a culturally rich and sensitive area. Responsibilities include pedestrian survey, coordination with Luiseño Native American monitor for the survey, identification and recording of cultural material and features, field notes, and photographs. Work performed for Eastern Municipal Water District.

EMWD Cactus II Feeder Transmission Pipeline IS/MND (2018). Staff Archaeologist on a survey for a proposed feeder transmission pipeline. Responsibilities include pedestrian survey, identification and recording of cultural material and features, and photographs. Work performed for Eastern Municipal Water District. Lead agency Eastern Municipal Water District.

EMWD Sky Canyon Sewer Environmental Consulting (2019). Staff Archaeologist for a cultural resources study for a proposed sewer pipeline project in the County of Riverside. Responsibilities include coordination with Native American monitors, intensive pedestrian survey, identification of cultural material and features, photographs, and field notes. Word performed for Eastern Municipal Water District.

EMWD Fox Tank Monitoring (2019). Archaeological Monitor for cultural resources monitoring effort during construction of the Fox Tank Project for the Eastern Municipal Water District. The project is located in the unincorporated community of Mead Valley, west of the City of Perris in the County of Riverside. The project consists of construction and operation of a new 1.0-million-gallon (MG) welded steel water tank and 0.15-MG (150,000 gallons) detention basin, installation of a new 12-inch-diameter pipeline within Fox Street and Ellis Road to connect the new tank to the existing water distribution network, and demolition of the existing 0.15-MG Orange Tank. Coordinated with construction crews and tribal cultural monitors from the Soboba Band of Luiseño Indians. Work performed for Eastern Municipal Water District.

EMWD Dale 2199C Pressure Zone Looping Pipeline Project (2019). Staff Archaeologist for a cultural resources study in the City of Moreno Valley. Responsibilities include coordination with Native American monitors, intensive pedestrian survey, identification of cultural materials and features, photographs, field notes, and assist with report. Work performed for Eastern Municipal Water District.

EMWD Purified Water Replenishment Environmental Impact Report (2020). Staff Archaeologist for a pedestrian survey in the City of San Jacinto, CA. Responsibilities include coordination with Native American monitors, an intensive pedestrian survey, identification of cultural resources and features. Work performed for Eastern Municipal Water District.

EVMWD Near Term Water Supply Program, On-call Professional Environmental Services (2019). Regional Agricultural Pipeline Conversion Project. Archaeological Monitor for the Agricultural Pipeline Conversion project, a three-agency partnership between the Elsinore Valley Municipal Water District (EVMWD), the City of Lake Elsinore, and the Riverside County Flood Control and Water Conservation District. The cultural resources monitoring program entailed working closely with tribal cultural monitors from two tribes, as well as coordination with construction crews and the construction management firm. Work performed for an on-call services contract to provide environmental services for water supply projects for the Elsinore Valley Municipal Water District.

Southwest Sewer Realignment (2016 - 2017). Archaeological Monitor for cultural resources monitoring during construction of a sewer realignment project in western Escondido, County of San Diego, adjacent to an ethnohistoric village site. The project is located in an area that is sensitive to both the Kumeyaay and Luiseño people, requiring close coordination with Native American monitors from both groups. Responsible for field monitoring, coordination with construction crew and Native American monitors, identification of artifacts and cultural features, and daily field notes. Work performed for the City of Escondido.

Vista Verde Reservoir Replacement Project - Phase II (2017). Archaeological Monitor for a reservoir and pipeline replacement project in the City of Escondido, San Diego County, CA. Responsible for field monitoring, coordination with construction crew and Native American monitors, identification of artifacts, photographs, and daily field notes. Work performed for the City of Escondido.

Emergency Storage Pond Project (2018). Staff Archaeologist for a cultural resources survey and testing program for an emergency storage pond as part of the City of Escondido's recycled water program. Responsibilities include pedestrian survey of the project area, excavating shovel test pits, identification and recovery of cultural resources and features, laboratory analysis, photographs, and assist with report. Work performed for City of Escondido.

Escondido Brine Line Project (2018 - 2019). Archaeological Monitor for the construction of approximately 2.3 miles of 15-inch brine return pipeline for the City of Escondido. The project, which is part of the City's Agricultural Recycled Water and Potable Reuse Program, enables discharge of brine recovered from a reverse osmosis facility that is treating recycled water. The project is located in an area that is sensitive to both the Kumeyaay and Luiseño people, requiring close coordination with Native American monitors from both groups. Provided archaeological monitoring, including daily monitoring and coordination with Native American monitors and construction crews. Work performed for the City of Escondido.

Painted Hills (2019). Archaeological monitor for a bridge repair project in the City of Corona, CA. Responsibilities include coordination with Native American monitors, field monitoring, identification of cultural material and features, photographs, and daily field notes. Work performed for KB Home. Lead agency is County of Riverside.

Turtle Ranch (2017). Archaeological monitor for a residential development project in the City of Winchester, County of Riverside, CA. Responsible for field monitoring, coordination with construction crew and Native American monitors, identification of artifacts and cultural features, and daily field notes, cleaning, sorting, laboratory analysis, and generating tables for recovered material. Work performed for KB Home.

12 Oaks Winery Resort (2015 - 2018). Staff Archaeologist for survey and testing of an approximately 600-acre project near Temecula in Riverside County, CA. Responsibilities included identification of cultural resources during field survey and testing, recording of resources and features, and photographs. Work performed for Standard Portfolio Temecula, LLC, with County of Riverside as the lead agency.

Guava Street Bridge at Murrieta Creek Project (2017 - 2018). Archaeological monitor during grading and auger activities for the replacement of the Guava Street Bridge at Murrieta Creek in the City of Murrieta, CA. Responsible for field monitoring, coordination with construction crew and Native American monitors, identification of artifacts and cultural features, photographs, and daily field notes. Work performed for Falcon Engineering Services, Inc.

Roripaugh Ranch - Phase 2 Project (2019). Archaeological monitor for a large residential development located in the City of Temecula, CA. Responsibilities include field monitoring, coordination with construction crew and Native American monitors, identification of cultural material and features, photographs, daily field notes, laboratory analysis, generating artifact tables, and assist with the report. Work performed for Woodside Homes. Lead agency City of Temecula.

Los Alamos Archaeological Monitoring Project (2019). Staff archaeologist for a residential development project in the City of Murrieta, CA. Responsibilities include laboratory analysis, photographing cultural material, generating a catalog, assist with report. Work performed for Zephyr Partners, RELLC. Lead agency City of Murrieta.

San Jacinto Property Project (2019 - 2020). Staff Archaeologist for a cultural resources study for a proposed residential subdivision project, located in a culturally sensitive area, in the City of San Jacinto, CA. Responsibilities include coordination with Native American monitors, an intensive pedestrian survey, identification of cultural material and features, photographs, field notes, and assist with report. Work performed for Walton International Group.

Appendix B

Records Search Results
(Confidential, bound separately)

Appendix C

Native American Correspondence
(Confidential, bound separately)

Appendix D

Locations of Cultural Resources
(Confidential, bound separately)

Appendix E

Site Records
(Confidential, bound separately)