Canyon Lake Water Treatment Plant Phase 1 Improvements Project

Draft Initial Study/ Mitigated Negative Declaration

September 2023 | 00407.00046.001

Lead Agency:

Elsinore Valley Municipal Water District
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Lake Elsinore, CA 92530

Prepared by:

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
AQMP	Air Quality Management Plan
BMP	best management practice
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCT	Chlorine Contact Tank
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFG Code	California Fish and Game Code
City	City of Canyon Lake
CLWTP	Canyon Lake Water Treatment Plant
CMU	concrete masonry unit
CO_2e	carbon dioxide equivalent
County	County of Riverside
CRHR	California Register of Historical Resources
DAMP	Drainage Area Management Plan
dBA	A-weighted decibel
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EIC	Eastern Information Center
EIR	Environmental Impact Report
EVMWD	Elsinore Valley Municipal Water District
FEMA	Federal Emergency Management Agency
GAC	granulated activated carbon
GHG	greenhouse gas
gpm	gallons per minute
HELIX	HELIX Environmental Planning, Inc.
hp	horsepower
HRER	Historical Resource Evaluation Report
HVAC	heating, ventilation, and air-conditioning
I-	Interstate-
in/sec	inch(es) per second
IRP	Integrated Resources Plan
IX	ion-exchange

ACRONYMS AND ABBREVIATIONS (cont.)

L_{EQ}	time-averaged noise level
LID	Low Impact Design
LIP	Local Implementation Plan
L_{MAX}	maximum noise level
LST	Localized Significance Threshold
MBTA	Migratory Bird Treaty Act
Metropolitan	Metropolitan Water District of Southern California
MG	million gallons
mg/L	milligrams per liter
MGD	million gallons per day
MMBTU	million British thermal units
MP	Master Plan
MRZ	Mineral Resource Zone
MS4	Municipal Separate Storm Sewer System
MSHCP	Multiple Species Habitat Conservation Plan
MT	metric ton
NAHC	Native American Heritage Commission
ng/L	nanograms per liter
NL	Notification Level
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OHWM	ordinary high-water mark
Pechanga	Pechanga Band of Indians
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonic acid
PM_{10}	particulate matter 10 microns or less in diameter
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
PPV	peak particle velocity
Rincon	Rincon Band of Luiseño Indians
RL	Response Level
ROW	right-of-way
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board

ACRONYMS AND ABBREVIATIONS (cont.)

SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SF	square feet
Soboba	Soboba Band of Luiseño Indians
SRA	source receptor area
STC	sound transmission class
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
T&O	taste and odor
TAC	toxic air contaminant
USACE	U.S. Army Corps of Engineers
UV	ultraviolet
V	volts
VHFHSZ	Very High Fire Hazard Severity Zone
WSP	welded steel pipe

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1.0 Introduction

1.1 Initial Study Information Sheet

1.	Project title:	Canyon Lake Water Treatment Plant Phase 1 Improvements Project
2.	Lead agency name and address:	Elsinore Valley Municipal Water District 31315 Chaney Street, Lake Elsinore, CA 92530
3.	Contact person and phone number:	Parag Kalaria, PE, PMP (951) 674-3146
4.	Project location:	Canyon Lake Water Treatment Plant Canyon Lake, CA Accessed via Longhorn Drive or Via De La Valle
5.	Project sponsor's name and address:	Elsinore Valley Municipal Water District 31315 Chaney Street, Lake Elsinore, CA 92530
6.	General plan designations:	CF: Other Community Facilities
7.	Zoning:	CF: Community Facility
8.	Description of project:	See Section 2
9.	Surrounding land uses and setting:	See Section 2

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement:

    - State Water Resources Control Board (SWRCB) Division of Drinking Water (Domestic Water Supply Permit)
    - SWRCB (General Construction Permit)
    - Regional Water Quality Control Board (RWQCB; National Pollutant Discharge Elimination System [NPDES] permit)
    - City of Canyon Lake (Building Permit)
    - City of Lake Elsinore (Encroachment Permit)

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

On March 20, 2023, the Elsinore Valley Municipal Water District (EVMWD) sent letters inviting the Soboba Band of Luiseño Indians (Soboba), Pechanga Band of Indians (Pechanga), Rincon Band of Luiseño Indians (Rincon), and Agua Caliente Band of Cahuilla Indians to consult under Assembly Bill (AB) 52. The Agua Caliente Band of Cahuilla Indians responded deferring to more local tribes. Soboba, Pechanga, and Rincon responded to these letters requesting consultation with EVMWD and have reviewed the cultural survey prepared for the Project and the proposed mitigation measures for impacts to tribal cultural resources. Consultation with Soboba, Pechanga, and Rincon under AB 52 concluded in April 2023. The SWRCB will undertake federal Section 106 consultation with interested Tribes.

2.0 Project Description

2.1 Project Location

The Canyon Lake Water Treatment Plant (CLWTP) is located east of Interstate (I-) 15 and west of I-215 in Riverside County (County), California. It is located within the City of Canyon Lake (City) and borders the City of Lake Elsinore on the southern end of Canyon Lake. The site can be accessed via Longhorn Drive or Via De La Valle, which connect to Old Newport Road and the access roads through the CLWTP. Refer to Figure 1, *Regional Location,* and Figure 2, *Aerial Photograph*.

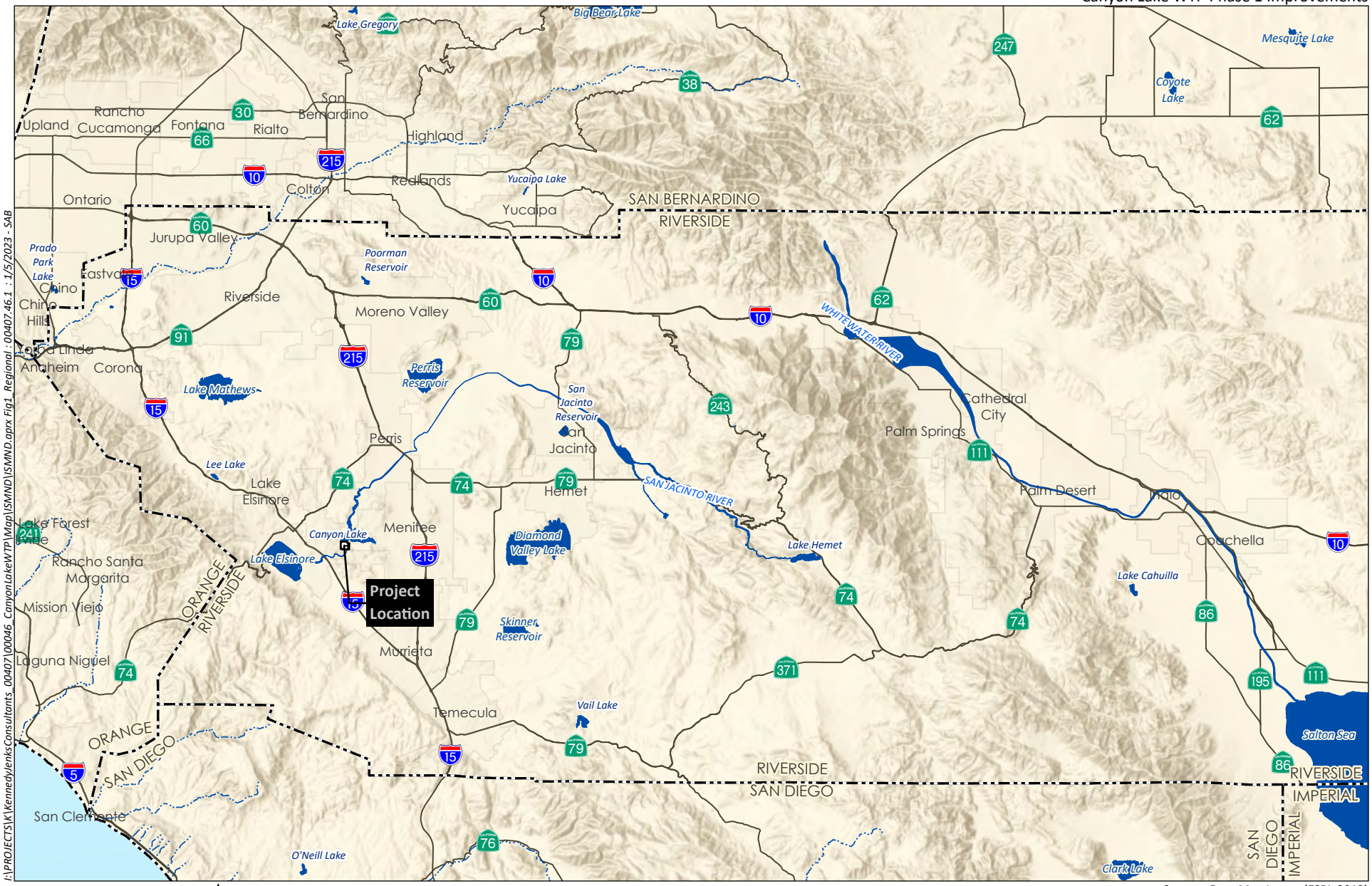
The overall CLWTP site is approximately 12.6 acres, or 548,300 square feet (SF). The site zoning is CF - Community Facility. For the Phase 1 Improvements Project, the Project disturbed site area is approximately 49,500 SF.

2.2 Project Background

EVMWD is a public utility, created on December 23, 1950, under the Municipal Water District Act of 1911. EVMWD provides public water service, water supply development and planning, wastewater treatment and disposal, and recycling. Currently, EVMWD has over 46,000 water, wastewater, and agricultural service connections over a 96-square-mile service area within the cities of Lake Elsinore, Wildomar, Canyon Lake, and Murrieta, and unincorporated portions of the County of Riverside. EVMWD is a sub agency of the Western Municipal Water District, a member agency of The Metropolitan Water District of Southern California (Metropolitan).

EVMWD owns and operates the CLWTP, which supplies roughly 10 to 13 percent of EVMWD's local water supply. The CLWTP was constructed in 1957 adjacent to the Railroad Canyon Dam and Railroad Canyon Reservoir. The Railroad Canyon Reservoir, colloquially known as Canyon Lake, is supplied by runoff from the San Jacinto Watershed. The lake currently has approximately 2,500 acre-feet of water storage available due to restrictions on the operating level of the reservoir. Raw water imported by Metropolitan is also stored in Canyon Lake. Surface water rights to Canyon Lake are owned by EVMWD and leased to the Canyon Lake Property Owners Association for recreation activities.

The CLWTP was constructed as a conventional water treatment facility with a treatment process that included sulfuric acid and ferric sulfate addition for enhanced coagulation, a single upflow clarifier, anthracite/sand dual media filtration, free chlorination through filtration, ultraviolet (UV) disinfection, and chloramination. As a result of sludge blanket upsets in the clarifier during periods of large temperature fluctuation and/or water quality changes, the current realistic maximum product water flow is approximately 5 million gallons per day (MGD) with an estimated average of 25 percent of plant flow lost to the sewer.



Source: Base Map Layers (ESRI, 2013)

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Regional Location

Figure 1



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Source: Aerial (Maxar, 2022)

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Aerial Photograph

Figure 2

EVMWD's 2017 Integrated Resources Plan (IRP) and 2018 Facilities Master Plan (MP) identified improvements to the CLWTP to support EVMWD's long-term water supply strategy. The 2018 MP recommended phased improvements that were categorized as short-term, moderate-term, and long-term improvements. The improvements would increase the CLWTP capacity to 7.0 MGD in the short-term and 9.0 MGD in the moderate and long-term phases.

After the MP improvements were evaluated, per- and polyfluoroalkyl substances (PFAS) were detected in Canyon Lake at levels above California's Notification Level (NL) and Response Level (RL) during sampling events in 2019. Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) levels in Canyon Lake averaged 22 nanograms per liter (ng/L) and 15 ng/L, respectively, which exceed current California NL of 5.1 ng/L for PFOA and 6.5 ng/L for PFOS.

The CLWTP Phase 1 Improvements Project (proposed Project) includes the short-term improvements discussed in the MP, as well as PFAS treatment and Taste and Odor (T&O) treatment, which was identified as a concern during the sampling events in 2019. These improvements are described further in Section 2.6.

After the sampling events in 2019, the CLWTP was subsequently shut down and is not planned to operate until the Phase 1 Improvements are implemented.

2.3 Overview of Existing CLWTP Facilities

An overview of the existing CLWTP process and facilities is provided below and shown in Figure 3, *Existing Facility*.

2.3.1 Intake Pumps

The CLWTP draws water via four submersible intake pumps located on a floating barge at the south side of Canyon Lake. The pump flows combine into an intake pipe conveying water to the plant's static and rapid mix system. The chemical injection and manifold structure were constructed in 1998 and consist of a 3-sided retaining wall with a metal grating platform partially covering the top.

The 2018 MP recommended replacing the existing pump station, including the intake pumps, floating barge, electrical building, and raw water pipeline due to an estimate of remaining useful life of 0 to 5 years. The description for the proposed new intake pump facility is described in Section 2.6.1.

2.3.2 Static and Rapid Mix

Existing plant flows leave the intake pumps and enter the static and rapid mix systems. The existing static mixer is a 30-inch diameter in-line mixer. The mixer was installed in 1995 and consists of a 9-horsepower (hp) motor on a platform attached to a gearbox. As part of the proposed Project, the existing static and rapid mix areas would be demolished and replaced with new equipment. The proposed new rapid mix system is described in Section 2.6.2.

2.3.3 Upflow Clarifier

The existing upflow clarifier is located east of the operations building. An inlet pipe conveys water from the rapid mix chamber into the clarifier. The upflow clarifier has consistently had sludge blanket upsets and solids carryover, which reduces filter run times. The proposed Project includes demolishing and

replacing the upflow clarifier with a new flocculation and sedimentation basin system, described further in Section 2.6.2.

2.3.4 Media Filters and Filter Building

The existing filter building is located southwest of the clarifier and contains four dual media filters, as well as the pipe gallery adjacent to the filters that house the air scour blowers, piping and valves, and a sodium hypochlorite storage and chemical feed system. Additionally, there is an uninterruptible power supply system that can power filter operations in case of a power failure. There are no changes proposed to the filter building.

2.3.5 Sodium Hypochlorite Storage and Feed System

Two diaphragm metering pumps are used to feed 12.5 percent sodium hypochlorite for pre-filter chlorination. Two 1,100-gallon double-wall polyethylene storage tanks for sodium hypochlorite are located adjacent to the metering pumps in the filter pipe gallery. The existing feed system located in the filter gallery would be demolished and a new feed system would be established as part of the Project improvements due to its accessibility concerns during chemical deliveries. The approach to this system is discussed in Section 2.6.6.

2.3.6 Ultraviolet Disinfection

Four online chlorine analyzers are located in the UV disinfection room. The analyzer data are sent to the supervisory control and data acquisition system and are used to automatically adjust the ammonia and sodium hypochlorite feed rates of the pumps located in chemical feed area 2 as needed to maintain the proper chlorine to ammonia ratio and total chlorine residual. No modifications to the UV system would be required as part of the Project.

2.3.7 Chlorine Contact Tank

The 250,000-gallon Chlorine Contact Tank (CCT) is located between the filter building and the one million-gallon (MG) clearwell. The tank is a flat-bottomed welded steel tank supported on a continuous concrete ring wall foundation. The CCT is currently used as a backup emergency CCT if/when the UV process shuts down. The CCT structure would not be modified as part of the Project.

2.3.8 Filter Backwash Pumps

The filter backwash pumps are located adjacent to the 1 MG clearwell. There are three pumps, each with 40 hp motors and a design capacity of 2,500 gallons per minute (gpm). The suction ends of the pumps draw from the clearwell tank 24-inch outlet pipeline, which is connected to the existing 30-inch distribution pipeline. The filter backwash pumps would not be modified as part of the Project.

2.3.9 Clearwell Tank

The clearwell tank is a 1-MG flat-bottomed welded steel tank supported on a continuous concrete ring wall foundation. The clearwell is located southeast of the filter building and north of the decant pond. Water from the CCT enters the clearwell for storage prior to distribution. No modifications are planned for the clearwell as part of the Project.



Source: Aerial (County of Riverside, 2020)

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Existing Facility

Figure 3

2.3.10 Decant Pond

The decant pond is located directly south of the CCT. It is an uncovered, concrete-lined containment basin, 20 feet in depth and holds approximately 1.2 MG. The decant water flowing back to the lake is permitted through a NPDES permit that requires total suspended solids less than 75 milligrams per liter (mg/L), chlorine residual less than 1.0 mg/L, and limits selected trace metals. EVMWD has reported that CLWTP cannot meet these permit requirements and has, for roughly the past decade, sent the decant flow to the sewer. For the proposed improvements, all waste streams are planned to be discharged to the decant pond, and ultimately the sewer. No modifications are planned for the decant pond.

2.3.11 Chemical Feed Area 1

Chemical feed area 1 is located west of the existing clarifier and contains chemical feed systems for potassium permanganate, ferric sulfate, sulfuric acid, poly-aluminum chloride, cationic polymer, and caustic soda. All six chemicals would be replaced and relocated in a centralized chemical location as part of the Project, as described in Section 2.6.5.

2.3.12 Chemical Feed Area 2

Chemical feed area 2 is located at a building adjacent to the filters (Chlorine Building). This building is used for housing one ammonia tank (340 gallons), one sodium hypochlorite tank (1,500 gallons), and two pumps each for both ammonia and sodium hypochlorite systems; these systems provide dosing for residual disinfection. The proposed Project improvements include the addition of a new heating, ventilation, and air-conditioning (HVAC) system to keep sodium hypochlorite concentrations stable year-round, as well as remote fill stations for sodium hypochlorite and ammonia.

2.3.13 Operations Building

The operations building is located west of the clarifier and consists of a double wide trailer. The building contains a laboratory, breakroom, bathroom, and office area. There are no planned improvements to the operations building.

2.4 Demolition Plan

The major process areas to be demolished, as shown on Figure 4, *Disturbance Area*, include:

- Intake pump station and pipeline
- In-line static mixer, rapid mixer, and chemical injection points
- Upflow clarifier
- Chemical feed area 1, storage rooms, and ancillary facilities

The mixer equipment to be demolished includes the existing rapid mix chamber, which consists of a concrete tank with a vertical mixer mounted on top of the tank. In place of the demolished equipment, a stable fill material would be used to regrade the affected areas. Following the demolition of chemical feed area 1, the area would be repaved to provide increased space for truck access to the proposed treatment systems as well as parking spaces for the facilities. Because the upflow clarifier, and rapid and static mix systems would be relocated, once these elements are demolished, the areas would be regraded with a stable fill material.

2.5 CLWTP Treatment Process

The proposed new treatment process for the CLWTP includes the following steps, as depicted in Figure 5, *Process Flow Diagram*:

1. Intake Pumps: Water would be taken in from Canyon Lake through a suction system that would transport the water via the pump station to the pre-treatment system through a 24-inch diameter pipeline.

2. Pre-treatment: The water would undergo pre-treatment by adding chemicals for enhanced coagulation. Additional chemicals would be added upstream of the flocculation and sedimentation basin. The water would then flow through the three-stage flocculation and sedimentation processes before flowing to the filters.

3. Dual Media Filtration: The water would be conveyed downhill and through existing anthracite/sand filters.

4. Booster Pumps: Filter effluent would be pumped to the PFAS/T&O pressure vessel system. The booster pumps would be in a building with an enclosed electrical room.

5. PFAS/T&O Treatment: This treatment consists of five granulated activated carbon (GAC) vessels in parallel followed by three ion-exchange (IX) vessels for a multi-barrier approach to PFAS removal.

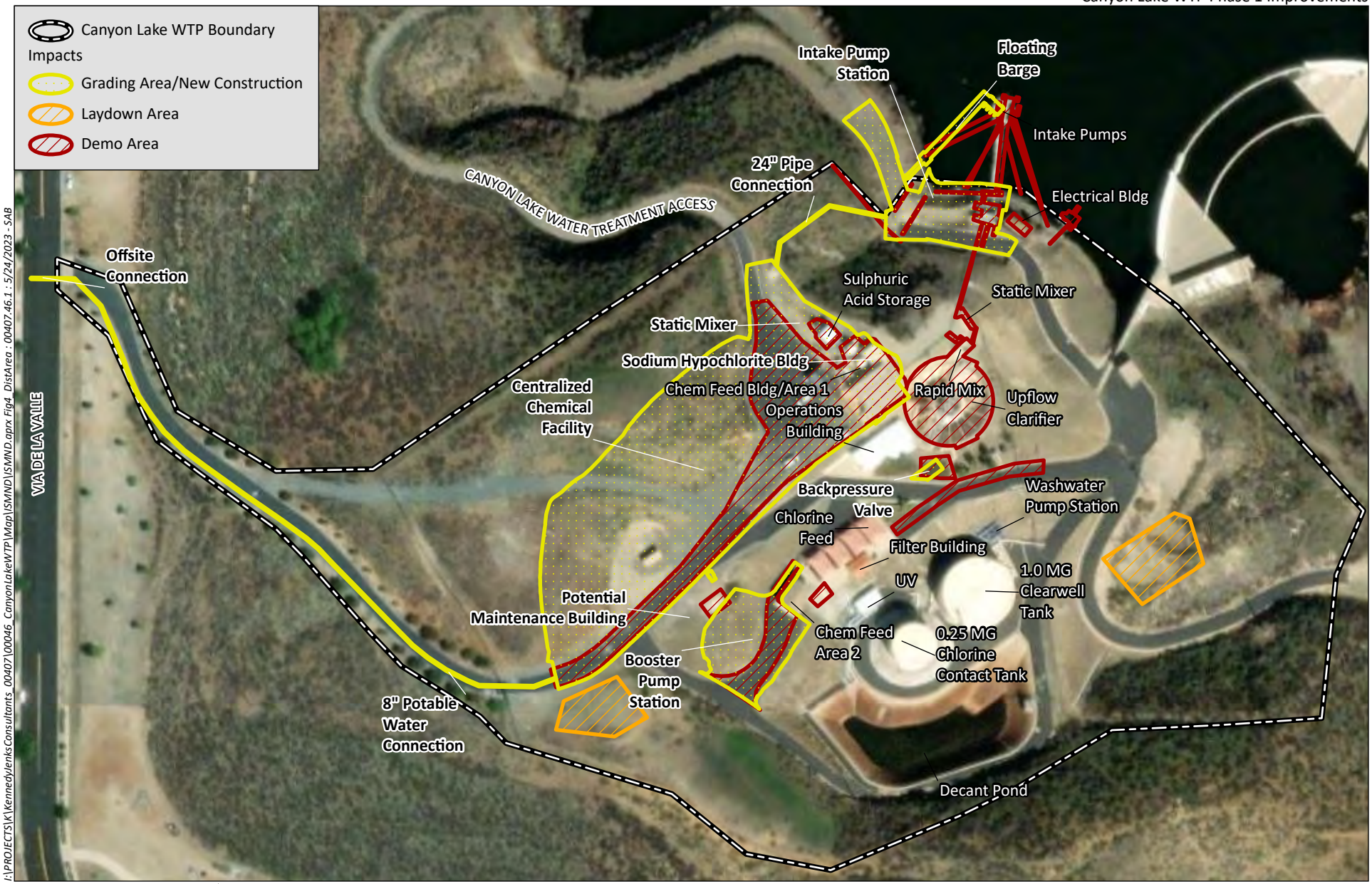
6. UV/Disinfection Treatment: Following treatment through the pressure vessels, the water would flow downhill to pass through the UV treatment and subsequent disinfection prior to conveyance to the distribution system.

2.6 Proposed CLWTP Phase 1 Improvements

The proposed Project improvements are described in greater detail below and are depicted on Figure 6, *Site Plan*, and Figure 7, *Proposed Improvement Areas*.

2.6.1 Intake Pump Station, Gangway, and Pipeline

The proposed intake pump station would consist of a fixed cast-in-place concrete structure located at the top of the lake's embankment slope. The intake pump station is sized for a design flow of 7 MGD (4,861 gpm) and hydraulic maximum flow of 9 MGD (6,250 gpm). The intake pump station would include four self-priming pumps. The suction system to the intake pump station would consist of four separate, 12-inch diameter high-density polyethylene pipes (each pump would have its own suction line). The discharge from the pump station would be a 24-inch diameter welded steel pipe (WSP) that would be routed to the flocculation/sedimentation basins. Maintenance access to the intake pump suction pipes would be available from a gangway and floating platform/dock in Canyon Lake. See Figure 8, *Intake Pump Station Piping Plan*, and Figure 9, *Gangway and Dock Cross Section*.



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Source: Aerial (County of Riverside, 2020)

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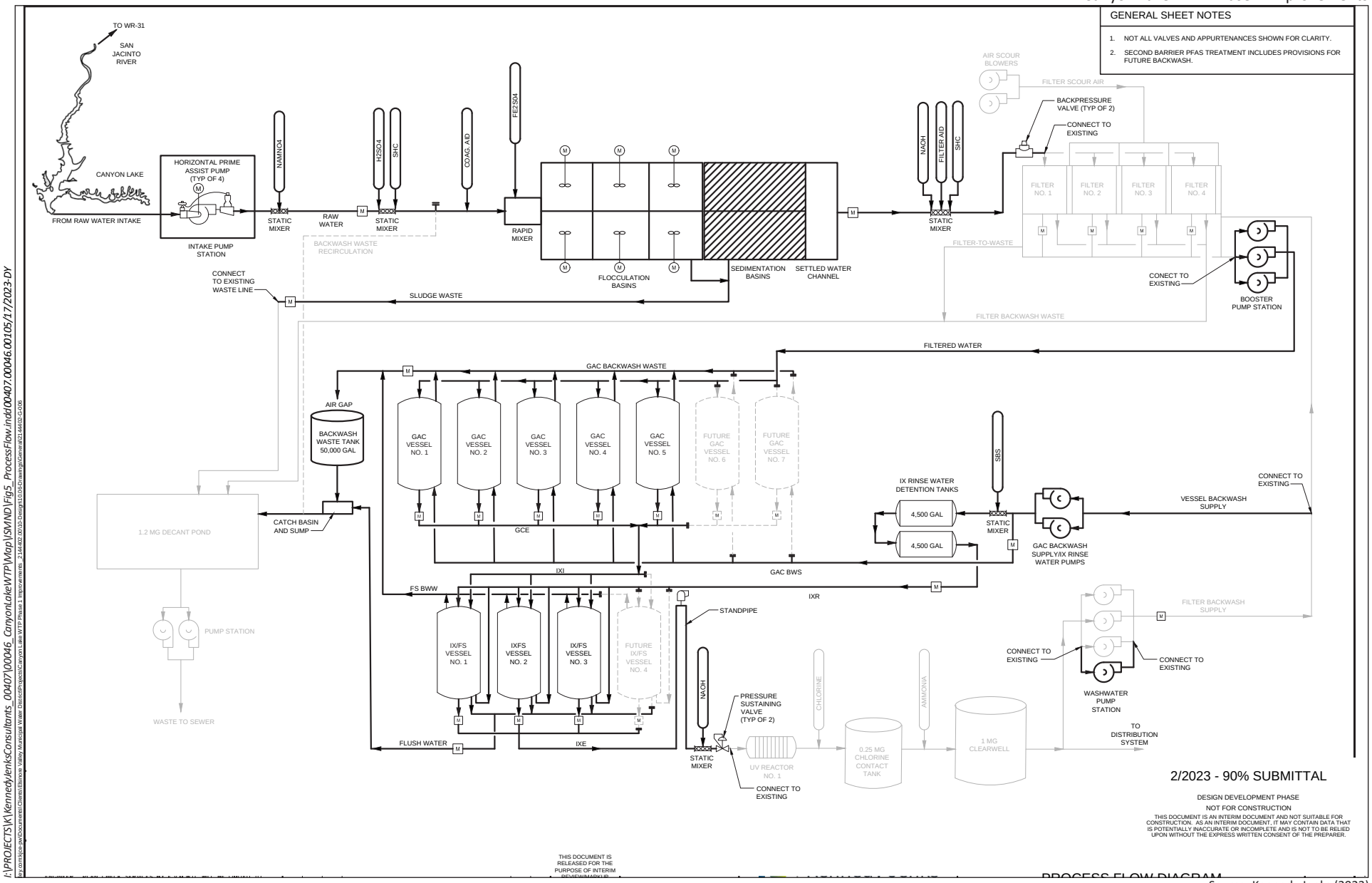
Disturbance Area

Figure 4



Source: Kennedy Jenks (2023)

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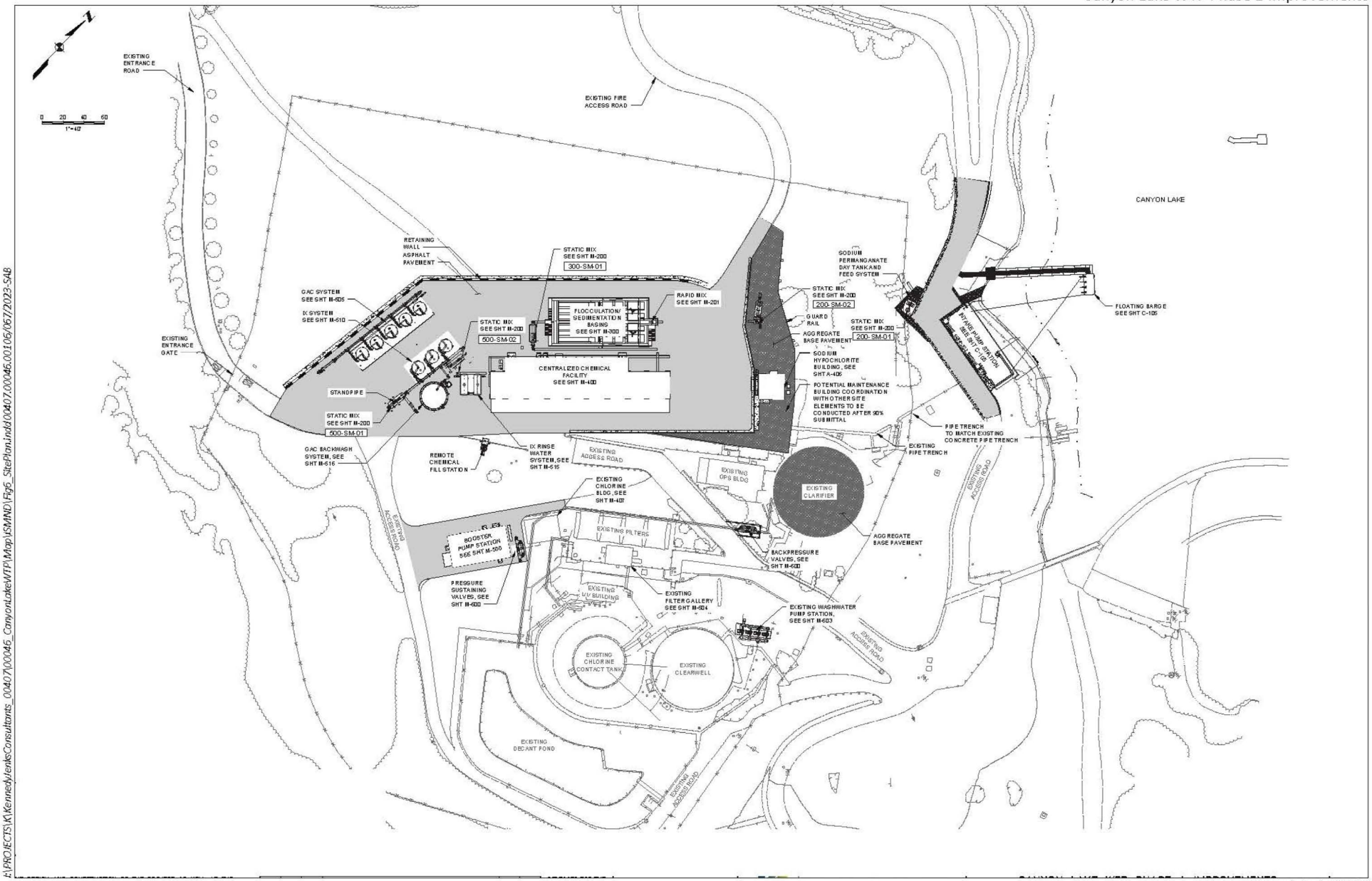
Process Flow Diagram

Figure 5



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Source: Kennedy Jenks (2023)

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Site Plan

Figure 6



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Source: Aerial (County of Riverside, 2020)

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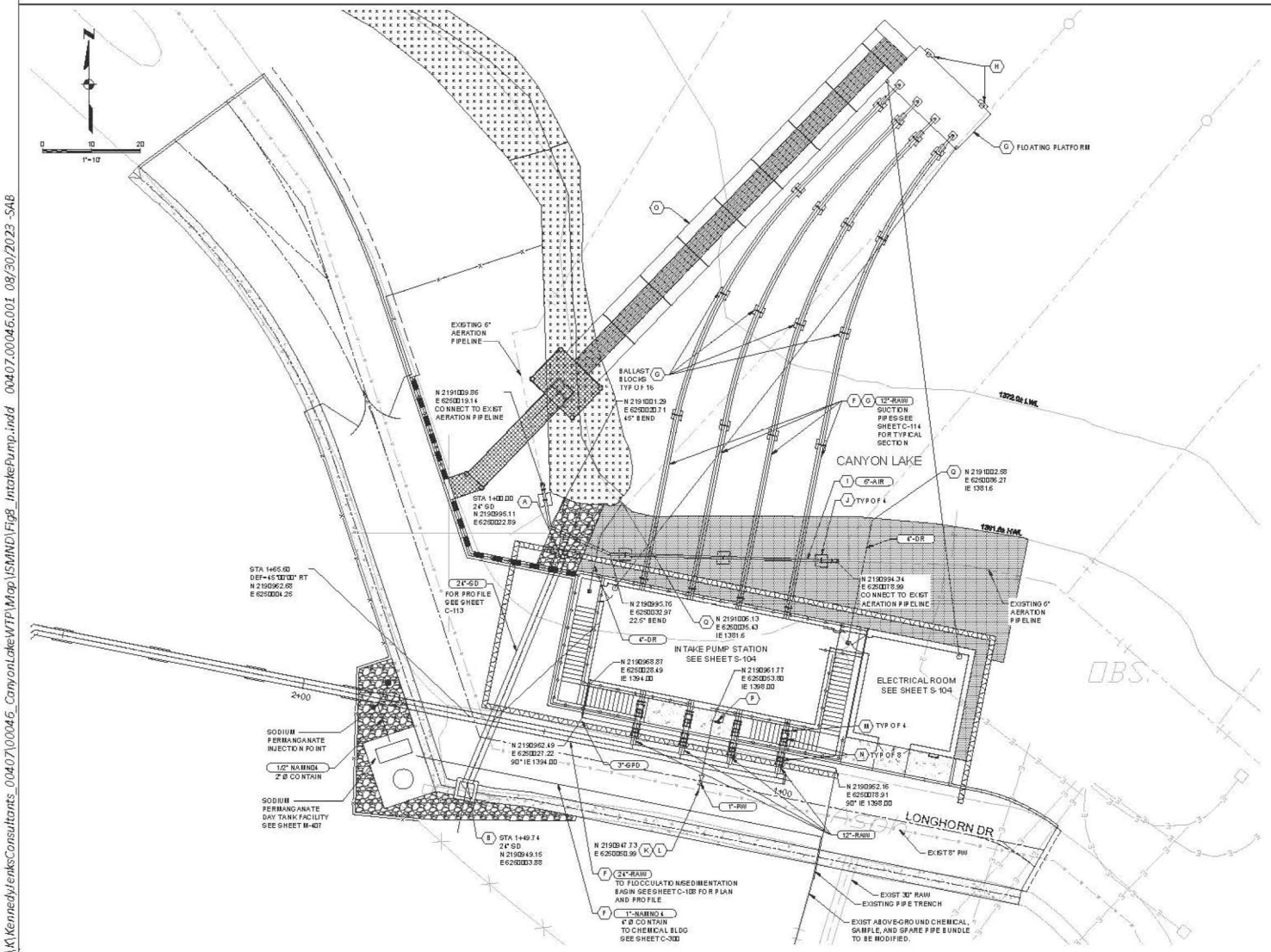
Proposed Improvement Areas

Figure 7



GENERAL SHEET NOTES

1. PIPE TRENCHING SHALL BE PER EVMWD STD PLAN NO. W-3
2. THE CONTRACTOR SHALL NOT PERFORM ANY CONSTRUCTION ACTIVITY WITHIN THE RESTRICTIVE ENVIRONMENTAL PROTECTION ZONE UNLESS SHOWN OTHERWISE. DISTURBED VEGETATION IN THE ENVIRONMENTAL PROTECTION ZONE SHALL BE REPLACED IN KIND AFTER CONSTRUCTION COMPLETION.

SHEET KEYNOTES

A. BEGIN CONSTRUCTION.
B. END CONSTRUCTION.
C. NOT USED.
D. NOT USED.
E. NOT USED.
F. CONSTRUCT PIPE.
G. FOR MANUFACTURED FLOATING PLATFORM SYSTEMS INCLUDING SUCTION PIPES, BALLAST BLOCKS, WINCHES, ANCHORING, AND ACCESSORIES, SEE SPEC SECTION 11399.
H. BALLAST BLOCK AND MANUALLY OPERATED WINCH TO MAINTAIN POSITIONING OF FLOATING WORK PLATFORM.
I. THE STAINLESS STEEL AIR HEADER LOCATED ALONG THE SHORELINE SHALL BE RAISED ABOVE 12 INCH RAW LINE AND SUPPORTED AT MAXIMUM SPACING OF 20 FEET.
J. CONCRETE SADDLE PIPE SUPPORTS.
K. CONNECT TO EXISTING 8" RW FOR 1" SERVICE WATER CONNECTION WITHOUT WATER METER ASSEMBLY SIMILAR TO EVMWD STD DWG NO. W-9.
L. LOCATION AND/OR DEPTH ARE UNKNOWN. THE CONTRACTOR SHALL POTHOLE EXISTING BURIED PIPE PRIOR TO CONSTRUCTION.
M. CONSTRUCT BURIED INSULATING FLANGE PER EVMWD STD DWG NO. CP-1 WITH CATHODIC TEST STATION PER EVMWD STD DWG NO. CP-4.
N. CONSTRUCT RESTRAINED FLEXIBLE COUPLING SIMILAR TO TYP DETAIL 8P300 ON SHEET C-121.
O. FLOATING ACCESS WALKWAY, SEE SPEC SECTION 11399.
P. CONSTRUCT 1" REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER PER EVMWD STD DWG NO W-218.
Q. CONSTRUCT STAINLESS STEEL SCREEN AT END OF DRAINS.

LEGEND

- RIP-RAP
- SHOTCRETE
- ENVIRONMENTAL PROTECTION ZONE
- RETAINING WALL

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Source: Kennedy Jenks (2023)

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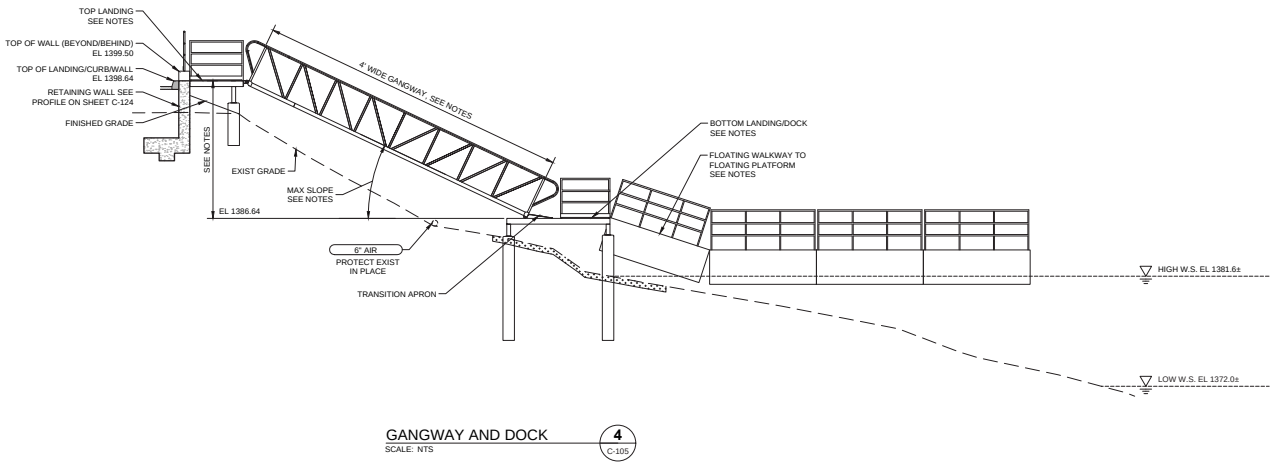
Intake Pump Station Piping Plan

Figure 8



GANGWAY AND DOCK 4
SCALE: NTS C-105

NOTES

1. DETAILS AND DIMENSIONS SHOWN HEREIN ARE APPROXIMATE AND FOR INFORMATION ONLY.
2. ALL MANUFACTURED LANDINGS, GANGWAY, AND FLOATING SYSTEMS SHOWN REQUIRE SECURE ANCHORING AND SUPPORT. THE CONTRACTOR SHALL DETERMINE THE FINAL LOCATIONS BASED ON THE MANUFACTURER'S FABRICATIONS AND ADJUST ACCORDINGLY TO THE SHOP DRAWINGS.
3. FOR MANUFACTURED LANDINGS, ANCHORING, SUPPORT COLUMNS/FOUNDATIONS, 4' GANGWAY, AND FLOATING WALKWAYS, SEE SPEC SECTION 11399.
4. GANGWAY SLOPE SHALL NOT EXCEED 30 DEGREES FROM THE HORIZONTAL PLANE.
5. THE CONTRACTOR SHALL NOT PERFORM ANY CONSTRUCTION ACTIVITY WITHIN THE RESTRICTIVE ENVIRONMENTAL PROTECTION ZONE UNLESS SHOWN OTHERWISE. DISTURBED VEGETATION IN THE ENVIRONMENTAL PROTECTION ZONE SHALL BE REPLACED IN KIND AFTER CONSTRUCTION COMPLETION.

LEGEND

ENVIRONMENTAL PROTECTION ZONE

2/2023 - 90% SUBMITTAL

DESIGN DEVELOPMENT PHASE

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Source: Kennedy Jenks (2023)

HELIX Environmental Planning

Gangway and Dock Cross Section

Figure 9

2.6.2 Pre-Treatment System

Static/Rapid Mixing

A new 24-inch static mixer would provide in-line mixing of sulfuric acid and chlorine prior to the flocculation/sedimentation basin. The distance between the sulfuric acid addition and inlet of the flocculation/sedimentation basin is approximately 50 feet, which allows for approximately 14.5 seconds of mixing time for pH adjustment. The static mixer and associated injection points would be in an aboveground structure for ease of maintenance. The purpose of rapid (flash) mixing is to disperse the water treatment chemicals quickly and throughout the water stream. The Project would use a chemical diffusion process, which uses a device to spray the chemical coagulant aid into the basin, mounted perpendicular to the inlet flow.

Flocculation and Sedimentation Basin

The existing upflow clarifier would be replaced by a flocculation/sedimentation system. The proposed flocculation basin would be 40 feet long by 20 feet wide by 20 feet deep. The sedimentation basin would be 50 feet long by 20 feet wide by 20 feet deep.

Flocculation and sedimentation are technological processes to separate and remove suspended solids within water treatment cycles. The flocculation process gathers particles together and causes them to collect or form into small masses or “flocs.” The coagulant added to water forms a gelatinous mass to trap (or bridge) particles thus forming a mass large enough to settle or be trapped in a filter. Since the flocs are heavier than water, they settle at the bottom of the sedimentation tank resulting in the removal of 90 percent of the suspended matter from the water. The process would consist of two treatment trains that would be sized for 7 MGD, with a hydraulic maximum of 9 MGD.

2.6.3 PFAS, Taste, and Odor Treatment

The proposed approach for PFAS and T&O treatment is to use multiple treatment barriers. The first treatment barrier would be GAC and the second would be IX. The GAC treatment system would consist of five 12-foot diameter by 26-foot-high vessels in parallel with individual valve manifolds. The valves associated with the system, with exception to a motor operated valve on each vessel discharge, would be manually operated and located at low elevations for ease of operations and maintenance. Each process would contain a header pipe located on a pipe rack, with connections to each vessel and isolation butterfly valves between and to each vessel. The GAC vessels are occasionally backwashed to remove clogging of the columns by suspended particles.

The elements of the fixed-bed, single-use IX system would consist of pressure vessels, anionic resin, process piping, and valves. This system would consist of three 12-foot diameter by 13-foot-high IX vessels, in parallel with individual valve manifolds.

2.6.4 Booster Pumps and Backwash Pump Station

A new booster pump and backwash pump station building would be constructed, which would be approximately 400 SF in area and 15 feet in height. The building would be constructed on a concrete slab foundation. Exterior walls would be integral-colored, split-face concrete masonry unit (CMU) with smooth CMU on the interior surfaces. The booster pumps would pump water leaving the sand/anthracite filters uphill to the treatment vessels. The booster pumps are vertical turbine can

pumps sized for long-term plant capacity (9 MGD), that are in a 2+ 1 configuration. The booster pumps are rated 200 hp each.

The backwash pumps that would supply water for the GAC backwash system and IX flush water system would be 1,074 gpm vertical turbine can pumps operating in a 1+1 configuration, sized at 40 hp each. A jockey pump is added by the existing wash water pumps to facilitate the backwashing process.

2.6.5 Centralized Chemical Facility

The new chemical storage facility would be constructed with the following interior spaces: electrical room, chemical feed pump rooms, and outdoor chemical tank storage areas in containment basins covered by a canopy. The building would be constructed on a concrete slab foundation. Exterior walls would be integral-colored, split-face CMU with smooth CMU on the interior surfaces. The estimated floor area is approximately 1,600 SF. The chemical building would not exceed 15 feet in height at the highest point. The chemical tank storage area would be roughly 3,300 SF. The canopy at the chemical tank storage area would be a steel frame and roof and would cover an area of approximately 800 SF and roughly 35 feet in height.

2.6.6 Sodium Hypochlorite Building

A new standalone sodium hypochlorite building would be constructed that would include chemical feed pumps, HVAC, a sample pump, and analyzer panels. The estimated floor area is approximately 576 SF and the building would be roughly 17 feet in height.

2.6.7 Maintenance Building

A new prefabricated metal maintenance building would be constructed that would include a work bench, spare parts, and storage for small vehicles. The anticipated size of this building would be approximately 1,250 SF.

2.6.8 Potable Water Pipeline

An 8-inch potable water pipeline would be constructed within the existing CLWTP driveway to provide potable water service to the CLWTP facilities. The pipeline would connect to an existing 8-inch water pipe within the Via De La Valle right-of-way (ROW) and extend down the existing driveway, which would be repaved after pipeline construction.

2.7 Site Grading, Piping, Drainage, Lighting, and Noise Control

2.7.1 Grading and Service Roads

Other disturbed areas would be paved to match the existing asphalt and base aggregate thicknesses in the existing site access roads. The site would be graded to maintain existing site flows. Site grading would utilize native and/or imported fill as needed. The grading plan requires an approximate net export of 19,000 cubic yards based on use of retaining walls.

2.7.2 Yard Piping

All water lines would be WSP, and cement mortar lined and coated. All pipelines would be sized such that velocities would not exceed 7 feet per second under all flow conditions.

2.7.3 Stormwater

The site design would incorporate Low Impact Design (LID) features in accordance with the Riverside County stormwater requirements, including the 2011 Design Handbook for LID Best Management Practices (BMPs), the Municipal Separate Storm Sewer System (MS4) Permit, and the Hydrology Manual. As part of the Santa Ana River Basin Plan, MS4 Permittees are required to implement BMPs to support attainment of Water Quality Standards. These are to be outlined in a Drainage Area Management Plan (DAMP) and a Local Implementation Plan (LIP).

2.7.4 Lighting

The lighting design would comply with California's Title 24 Energy Efficiency Standards, and American Society of Heating and Air-Conditioning Engineers Standard 90.1. The lighting plan incorporates the following features:

- LED fixtures would be used for all general-purpose exterior, "wall packs," or pole mounted site and area lights. Voltage would be 120 volts (V) and would achieve an average of 2 foot-candles on the ground. Wall mounted LED downward facing sconces would be used at the exterior of all building exits.

- LED linear fixtures would be used in all interior spaces. Voltage would be 120 V.

- Battery-operated emergency and exit lights would be used in the equipment building. Exit lights would be LED type, and Emergency lights will be halogen. Voltage would be 120 V.

2.7.5 Noise Control

Noise-generating mechanical equipment such as pumps and motors would be enclosed in buildings. Louvers in structures housing pumps or noise-generating equipment would not face the nearest property line.

2.8 Construction Equipment and Sequencing

The duration of construction is estimated to be approximately 25 months, starting February 2024. There would be 8 main phases of construction and preparation for CLWTP operation, some of which may overlap. An overview of the construction schedule assumed in this analysis is provided in Table 1, *Anticipated Construction Schedule*. Construction staging and laydown areas would be within the CLWTP facility, as shown on Figure 4. Access to the CLWTP would occur from the existing driveway and through Happy Camp Campground north of the site.

Table 1
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Activity	Construction Period Start	Construction Period End	Number of Working Days
Demolition	2/1/2024	7/3/2024	110
Clearing and Grubbing	7/4/2024	9/11/2024	50
Structural Foundations/Buildings	9/12/2024	2/12/2025	110
Major Equipment Process Installation	2/13/2025	5/28/2025	75
Piping Installation	5/29/2025	11/26/2025	130
Electrical Equipment Installation	11/27/2025	3/4/2026	70

2.8.1 Phase 1: Demolition

This phase would begin with the demolition of some existing facilities, equipment and materials including the existing floating intake/pump station, clarifier and chemical storage and handling facility. This phase would last three months. Standard construction equipment would be employed, including a backhoe, excavator, sheepsfoot roller, vibratory plates, roller/compactor, asphalt paver, and dump/cement trucks.

2.8.2 Phase 2: Clearing and Grubbing, Civil/Site Work

This phase would entail clearing and grubbing as well as grading work of the site once demolition is complete. This phase would last approximately three months. Excavation would occur wholly within the developed facility area. Standard construction equipment would be employed, including excavators, skid steers/motor graders, and roller/compactors.

2.8.3 Phase 3: Structural Foundations/Buildings

This phase would involve foundation work for equipment and major buildings, including but not limited to equipment pads/foundations, concrete containment areas, and building foundations. This phase would last almost three months.

2.8.4 Phase 4: Major Equipment Process Installation

This phase would involve installation of major equipment, including PFAS treatment equipment, chemical tanks and feed systems, intake pumps and gangway/dock, booster and backwash pumps, flocculators, and plate settlers, including but not limited to equipment pads/foundations, concrete containment areas, and building foundations. This phase would last two months.

2.8.5 Phase 5: Piping Installation

This phase would involve installation of underground and above ground piping for the site, including trench installation. This phase would last approximately three and a half months.

2.8.6 Phase 6: Electrical Equipment Installation, Wire Pull and Termination

This phase would involve installation of major electrical equipment, conduit routing, and associated electrical work at the site. This phase would last two months.

2.8.7 Phase 7: O&M Manuals

This phase would involve preparation of operation and maintenance manuals for equipment and processes. This phase would last one month.

2.8.8 Phase 8: Inspections and Approvals

This phase would involve final inspections and approvals of the site, prior to start-up and testing. This phase would last one month.

2.9 Construction Best Management Practices

2.9.1 Air Quality

Construction would implement standard dust control measures as required by South Coast Air Quality Management District (SCAQMD) Rule 403, including watering two times daily during grading, ensuring that all exposed surfaces maintain a minimum soil moisture of 12 percent, and limiting vehicle speeds on unpaved roads to 15 miles per hour. All trucks hauling dirt, sand, soil, or other loose materials would be covered with a fabric cover and maintain a freeboard height of 12 inches.

2.9.2 Brush Management

To minimize the risk of losses resulting from wildfire, the following measures would be implemented during construction of the Project:

- Construction within areas of dense foliage during dry conditions will be avoided, when feasible.
- In cases where avoidance is not feasible, brush fire prevention and management practices will be incorporated. Specifics of the brush management program will be incorporated into Project construction documents.

2.9.3 Water Quality

Implementation of the proposed Project would require conformance with the NPDES requirements. Such conformance would entail implementation of a Storm Water Pollution Prevention Plan (SWPPP) to address the discharge of contaminants (including construction-related hazardous materials) and minimize runoff through appropriate BMPs.

As a standard construction practice and regulatory requirement, EVMWD would implement best BMPs from the required SWPPP for the Project, which may include:

- Covering stockpiled excavated and/or fill materials to reduce potential off-site sediment transport;
- Employing appropriate standard spill prevention practices and clean-up materials;
- Maintaining the Project area free of trash and debris;
- Properly storing, handling, and disposing of toxins and pollutants, including waste materials;

- Using erosion control devices, such as straw wattles, mulch, mats, and/or geotextiles;
- Using sediment catchment structures such as hay bales, gravel or sandbags, silt fencing, fiber rolls, matting, berms, or similar devices along grading boundaries and drainage courses to prevent off-site sediment transport;
- Daily backfilling, compaction, and/or covering of excavated trenches to minimize erosion potential; and/or
- Regularly inspecting and maintaining all erosion control and sediment catchment facilities to ensure proper function and effectiveness.

2.10 Surrounding Land Uses

Land uses in the vicinity of the proposed Project include residential, open space, and community facilities in the southwestern portion of the City (Figure 2). The proposed Project components would be located within the existing facility property, a portion of Canyon Lake, and a small portion of Via De La Valle. See Figures 10a and 10b, *Site Photos*.



View of existing buildings from southwestern portion of site, looking northeast.



View of existing decant pond, tanks, and buildings from southern portion of site, looking north.

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View of Canyon Lake from existing chemical feed area 1, looking northeast.



View of intake pump and barge with electrical building at right, looking north.

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3.0 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

☐ None		
☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☐ Geology and Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology and Water Quality	☒ Land Use and Planning	☐ Mineral Resources
☒ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities and Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

3.1 Determination

On the basis of this initial evaluation:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that, although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that, although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Parag Kalaria
Signature

September 8, 2023
Date

Parag Kalaria
Printed name

Elsinore Valley Municipal Water District
For

4.0 Environmental Initial Study Checklist

The lead agency has defined the column headings in the environmental checklist as follows:

A. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.

B. "Less Than Significant with Mitigation Incorporated" applies where the inclusion of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." All mitigation measures are described, including a brief explanation of how the measures reduce the effect to a less than significant level. Mitigation measures from earlier analyses may be cross-referenced.

C. "Less Than Significant Impact" applies where a project does not create an impact that exceeds a stated significance threshold.

D. "No Impact" applies where a project does not create an impact in that category. "No Impact" answers do not require an explanation if they are adequately supported by the information sources cited by the lead agency which show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project specific screening analysis).

The explanation of each issue identifies the significance criteria or threshold used to evaluate each question; and the mitigation measure identified, if any, to reduce the impact to less than significance. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other California Environmental Quality Act (CEQA) process, an effect has been adequately analyzed in an earlier EIR or negative declaration [CEQA Guidelines Section 15063(c)(3)(D)]. Where appropriate, the discussion identifies the following:

a) Earlier Analyses Used. Identifies where earlier analyses are available for review.

b) Impacts Adequately Addressed. Identifies which effects from the checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and states whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less Than Significant with Mitigation Incorporated," describes the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

I. Aesthetics

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

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

Less Than Significant Impact. Canyon Lake and surrounding ridgelines comprise the primary scenic vistas available in the City. Views of Canyon Lake are available from many locations that slope upwards from its shoreline, which are generally developed with residential land uses. The CLWTP is located near the elevation of the lake's surface, thus views of Canyon Lake from west and south of the CLWTP are not interrupted by the existing components since they are located at higher elevations. Construction of the Project would result in new structures up to 35 feet in height. During construction, equipment would be visible in the Project area but would be located there temporarily and removed upon completion of construction. The permanent Project components would alter views of Canyon Lake from locations surrounding the Project site; however, these structures would not be of a scale that would block views of Canyon Lake. Therefore, the Project would not have a substantial adverse effect on a scenic vista and impacts would be less than significant.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The Project site is not within the viewshed of a designated state scenic highway, as the nearest designated state scenic highway is a portion of State Route 74 located approximately 25 miles east of the Project site (California Department of Transportation [Caltrans] 2019). The portions of I-15 and State Route 74 located 1.6 miles and 3.3 miles from the Project site, respectively, are eligible state scenic highways. However, if these highways were designated as state scenic highways in the future, the Project would not be visible due to intervening development. Thus, the Project would not result in damage to scenic resources in a state scenic highway and no impact would occur.

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

Less Than Significant Impact. Public Resources Code 21071 defines the term "urbanized area" for the purpose of CEQA to mean an incorporated city that has a population of at least 100,000 persons or has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons. U.S. Census Bureau data from 2021 indicates that the City has a population of 11,166 persons and the adjacent City of Menifee has a population of 102,654 persons (U.S. Census Bureau 2021). The Project site is within an urbanized area and therefore, is evaluated relative to applicable zoning and other regulations governing scenic quality.

As a Project in the Community Facility zone, no regulations govern the visual character of the Project and, thus, the Project would not conflict with zoning or scenic quality regulations. As described in item I.a, the Project would not substantially degrade views of Canyon Lake. Impacts would be less than significant.

d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Less Than Significant Impact. Construction of the proposed Project would occur during daylight hours and no major light sources would be required. Lighting would be installed for Project operation, as detailed in Section 2.7.4. All exterior lighting would be shielded downward and would not introduce a substantial source of light. In addition, the nearest residences are at least 300 feet away from the locations where lighting would be installed; therefore, lighting would not encroach into these properties. The exteriors of proposed buildings and other above-ground Project components would not include large areas of glass or other materials that would generate substantial glare. The Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area and impacts would be less than significant.

II. Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non- forest use?	☐	☐	☐	☒

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

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact (a and b). According to the California Important Farmland Finder, the Project site is designated as Other Land, which is land not included in another Farmland category (California Department of Conservation 2018). The Project site and its surroundings are primarily developed and are not zoned for agricultural activities. Williamson Act contracts are intended to preserve agricultural lands, which are not present at the Project site. Therefore, the Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use and would not conflict with zoning for agricultural use or a Williamson Act contract. No impact would occur.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact (c and d). The Project site is within an existing water treatment plant and contains minimal tree cover. The site is not zoned for forest land, timberland, or timberland zoned Timberland Production. Therefore, the Project would not result in rezoning of these uses or the conversion of forest land to a non-forest use. No impact would occur.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. As discussed in items II.a through d above, the Project site does not contain agricultural or forest land uses. The Project would not result in conversion of these uses and no impact would occur.

III. Air Quality

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

The discussion below is based on the Air Quality, Greenhouse Gas Emissions, and Energy Technical Report prepared by HELIX Environmental Planning, Inc. (HELIX; 2023a), attached to this Initial Study as Appendix A. Criteria pollutant emissions for the Project were calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1.1.14.

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

Less Than Significant Impact. The Project is located within the South Coast Air Basin (SCAB). The South Coast Air Quality Management District (SCAQMD) is responsible for implementing emissions standards and other requirements of federal and state laws in the SCAB. As required by the California Clean Air Act, the SCAQMD has responded to the requirement to decrease emissions 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 to achieve multiple goals related to reductions in criteria pollutant, greenhouse gases (GHGs), and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2022). 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 national ambient air quality standard for 8-hour ozone, the attainment of which would require substantial reductions in nitrogen oxides (NO_X) emissions. The AQMP is incorporated into the State Implementation Plan, which is subsequently submitted to the U.S. Environmental Protection Agency.

The 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, economy, community development, and environment as the federally designated metropolitan planning organization for the region. With regard to air quality planning, SCAG

has prepared the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), a long-range transportation plan that uses growth forecasts to project trends out over a 20-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.

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 exceed the assumptions in the AQMP.

With respect to the first criterion, as demonstrated in item III. B below, the Project would not generate short-term or 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.

With respect to the second criterion, the Project proposes improvements to the CLWTP to provide water treatment services to the region. The capacity of the CLWTP would be increased with implementation of the Project to serve existing and planned populations but would not result in population or employment increases itself and, therefore, would not exceed the growth projection assumptions in the AQMP. Employees that would construct the Project would be recruited from the local pool of labor and would not create employment growth exceeding growth estimates for the area. Six new employees would be required to operate the Project and would not exceed employment growth estimates for the region. The proposed CLWTP improvements would serve existing and planned development and would not create conditions for the creation of new housing, which would thereby induce population growth.

Because the Project would not generate population and employment growth beyond the levels assumed for the region, pursuant to SCAQMD guidelines, the proposed Project is considered consistent with the region's AQMP. As such, proposed Project-related emissions are accounted for in the AQMP, which is crafted to bring the basin into attainment for all criteria pollutants. Accordingly, the proposed Project would be consistent with the emissions projections in the AQMP, the applicable air quality plan for the Project region, and impacts would be less than significant.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact. By its very nature, air pollution is largely a cumulative impact. The region is a federal and/or state nonattainment area for ozone, particulate matter 10 microns or less in diameter (PM_{10}), and particulate matter 2.5 microns or less in diameter ($PM_{2.5}$). If a project conflicts with the AQMP, which is intended to bring the SCAB into attainment for all criteria pollutants, that project can be considered cumulatively considerable. As discussed in item III.A, above, the Project would not conflict with or obstruct implementation of the AQMP. Additionally, if the mass regional emissions calculated for a project exceed the applicable SCAQMD daily significance thresholds that are designed to assist the region in attaining the applicable state and national ambient air quality standards, that project can be considered cumulatively considerable.

The Project would generate criteria pollutants and precursors in the short-term during construction. Project operations would primarily result in increased electric demand generating indirect GHG emissions and 12 new vehicle trips for employees. The Project's construction and operation period emissions were calculated using CalEEMod. Project-specific inputs were based on general Project information, assumptions provided by the Project engineers, and default model settings to estimate reasonably conservative conditions. In compliance with SCAQMD Rule 403, fugitive dust emissions calculations assumed application of water on exposed surface a minimum of two times per day, a speed limit of 25 miles per hour enforced for vehicles traveling on unpaved surfaces, and sweeping of paved roads once per month.

The results of the calculations for Project construction are shown in Table 2, *Maximum Daily Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the SCAQMD thresholds (SCAQMD 2019).

Table 2
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Activity	Pollutant Emissions (pounds/day)					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Demolition	3.0	27.9	27.4	<0.1	1.6	1.2
Clearing and Grubbing	4.2	43.0	39.6	0.1	10.8	6.0
Structural Foundations/Buildings	1.0	8.6	11.2	<0.1	0.4	0.4
Major Equipment Process Installation	2.9	11.7	14.8	<0.1	0.5	0.4
Piping Installation	0.5	4.1	5.8	<0.1	0.3	0.2
Electrical Equipment Installation	1.1	10.5	13.2	<0.1	0.5	0.4
Maximum Daily Emissions	**4.2**	**43.0**	**39.6**	**0.1**	**10.8**	**6.0**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: HELIX 2023a
VOC = volatile organic compound; 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; SCAQMD = South Coast Air Quality Management District

As shown in Table 2, the Project's construction emissions would not exceed SCAQMD thresholds. Operation period emissions would not exceed one pound per day of each criteria pollutant and operation emissions would not exceed the SCAQMD significance thresholds for operation. As both construction and operation emissions from the Project would remain below the applicable SCAQMD significance thresholds, the Project would not result in a cumulatively considerable net increase of any criteria pollutant. Impacts would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. The closest existing sensitive receptor location to the Project site is a single-family development located to the west across Via de la Valle approximately 50 feet from the limits of disturbance where the water pipeline connection would be installed. The residence closest to the proposed grading area is located approximately 290 feet to the south along Via de la Valle. On-site emissions during Project operation would be limited to minor maintenance activities and employee vehicle trips, which would not result in

substantial quantities of criteria pollutants at sensitive receptors. Therefore, the following discussion focuses on potential impacts to sensitive receptors during Project construction.

Criteria Pollutants

The localized effects from the on-site portion of daily construction emissions were evaluated at sensitive receptor locations potentially impacted by the Project according to the SCAQMD's Localized Significance Thresholds (LSTs) method. 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 source receptor area (SRA). 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 proposed Project is within SRA 25, Lake Elsinore, and the closest existing sensitive receptor location to the proposed earthmoving activities is approximately 290 feet from the limits of disturbance. Based on the proposed equipment mix, up to two acres of land per day would be graded. Therefore, the LSTs in SRA 25 for project sites of two acres with receptors located within 50 meters (164 feet) were used in this analysis (SCAQMD 2009). 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 do not contribute to emissions generated on a project site. Table 3, *Maximum Localized Daily Construction Emissions*, shows the localized construction emissions for comparison with the applicable LSTs.

Table 3
MAXIMUM LOCALIZED DAILY CONSTRUCTION EMISSIONS

Activity	Pollutant Emissions (pounds/day)			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
Demolition	27.7	25.5	1.3	1.1
Clearing and Grubbing	39.2	36.8	9.6	5.6
Structural Foundations/Buildings	8.5	10.9	0.4	0.4
Major Equipment Process Installation	11.6	14.6	0.5	0.4
Piping Installation	4.1	5.3	0.2	0.2
Electrical Equipment Installation	10.4	13.0	0.4	0.4
Maximum Daily Emissions	**39.2**	**36.8**	**9.6**	**5.6**
SCAQMD LST Thresholds	*275*	*1,100*	*20*	*6*
Exceed LST?	***No***	***No***	***No***	***No***

Source: HELIX 2023a
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; SCAQMD = South Coast Air Quality Management District; LST = Localized Significance Threshold

As shown in Table 3, localized emissions for all criteria pollutants would remain below their respective SCAQMD LSTs and impacts to sensitive receptors would be less than significant.

Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is known as diesel particulate matter (DPM). In 1998, the California Air Resource Board (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.

Construction of the Project would result in the use of heavy-duty construction equipment, haul trucks, on-site generators, and construction worker vehicles. These vehicles and equipment could generate DPM, which is a TAC. Generation of DPM from construction projects typically occurs in a localized area 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 to would also vary throughout the construction period. During some equipment-intensive phases such as grading, construction-related emissions would be higher than other less equipment-intensive phases such as equipment installation. Concentrations of DPM emissions are typically reduced by 70 percent at approximately 500 feet.

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 the Office of Environmental Health Hazard Assessment) 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 consistent 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. Considering this information, the highly dispersive nature of DPM, and the fact that construction activities would occur at various locations and varying intensities throughout the Project site, it is not anticipated that construction of the Project would expose sensitive receptors to substantial DPM concentrations and impacts would be less than significant.

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

Less Than Significant Impact. 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. The Project is proposing improvements to the CLWTP to provide water treatment services to the region and would not include any of these uses nor are there any of these land uses in the Project vicinity.

Emissions from construction equipment, such as diesel exhaust, 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.

Furthermore, short-term construction-related odors are expected to cease upon Project buildout. Long-term operation of the Project would be similar to existing conditions and would not be a substantial source of objectionable odors. Therefore, the Project would not create objectionable odors affecting a substantial number of people, and the impact would be less than significant.

IV. Biological Resources

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☒	☐	☐
c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

The discussion below is based on the Biological Resources Letter Report prepared by HELIX (2023b), attached to this Initial Study as Appendix B. The report included the results of a literature review, general biological survey, jurisdictional delineation, rare plant survey, coastal California gnatcatcher surveys, and burrowing owl assessment.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. The Project site comprises a mix of development from the existing CLWTP as well as undeveloped land supporting native and non-native vegetation, primarily classified as Encelia scrub or Riversidian sage scrub. In total, six general vegetation communities and land cover types were identified on the Project site during biological surveys: sage scrub (i.e., Riversidian sage scrub and encelia scrub), including disturbed forms; southern willow scrub; herbaceous wetland; open water; disturbed habitat; and developed land. Potential impacts to individual special-status plant and animal species utilizing these habitats are identified in the following discussion.

Special-Status Plant Species

No special-status plant species have been observed within the Project during biological field surveys, including focused rare plant surveys. Based on literature and databases reviews for the biological resources report, 25 special-status plant species were evaluated for their potential to occur at the CLWTP. Of the 25 special-status plant species, 9 species are considered to have low potential to occur and the remaining 16 species were determined not likely to occur. As there are no special-status or rare plant species anticipated to occur within the Project site, the Project would not result in adverse effects on these species and no impact would occur.

Special-Status Animal Species

Four special-status animal species were detected during the biological surveys conducted for the Project. These included coastal California gnatcatcher (*Polioptila californica californica*), which is a federally listed threatened species; Bell's sage sparrow (*Artemisiospiza belli belli*), which is a federal bird of conservation concern and state watch list species; the Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), which is a state watch list species; and orange-throated whiptail (*Aspidoscelis hyperythra*), which is a state watch list species. Based on the literature review and database query results, 33 special-status animal species were evaluated for their potential to occur at the Project site and, aside from the four species detected during surveys, one species was considered to have moderate potential to occur: Coastal whiptail (*Aspidoscelis tigris stejnegeri*), which is a state species of special concern. The remainder of the special-status animal species evaluated, including burrowing owl, were determined to have low or no potential to occur due to the lack of suitable habitat.

Impacts to coastal California gnatcatcher, Bell's sage sparrow, or California-rufous-crowned sparrow individuals are not anticipated to occur due to the mobility of the species and ability to move (i.e., fly) away from construction activities. However, the Project would result in impacts to vegetation (Encelia scrub and Riversidian sage scrub) considered to be occupied by these species based on surveys of the Project site.

Permanent impacts to approximately 0.70 acre of Encelia scrub and Riversidian sage scrub habitat assumed to be occupied coastal California gnatcatcher habitat would be considered significant. The use of a laydown staging area would result in a temporary impact to approximately 0.06 acre of coastal California gnatcatcher habitat; however, this habitat would be replanted to reflect the pre-Project habitat or better after construction is completed. Temporary impacts to this habitat would be considered less than significant. To address the potentially significant permanent impact to approximately 0.70 acre of habitat, mitigation measure BIO-1 would require replacement of the habitat

at a 1:1 ratio via on- or off- site habitat mitigation. With implementation of mitigation measure BIO-1, impacts to coastal California gnatcatcher habitat would be less than significant.

Bell's sage sparrow and California-rufous-crowned sparrow are relatively widespread throughout the Project region and impacts to their habitat would not likely jeopardize the status of the species in the region or directly contribute to the future elevated listing of these species. Habitat creation, restoration/enhancement, and other habitat-based mitigation would result in no-net loss of habitat for these species. In addition, compliance with the Migratory Bird Treaty Act (MBTA) would avoid direct or indirect impacts to nesting of these species. Therefore, impacts to Bell's sage sparrow and California rufous-crowned sparrow would be less than significant.

In addition to permanent habitat removal, the Project has the potential to result in significant impacts to coastal California gnatcatcher nesting as a result of vegetation and/or nest removal and construction-generated noise if Project activities are implemented during the breeding season (February 15 to August 30). Mitigation measure BIO-2 would require pre-construction surveys to occur for work during the coastal California gnatcatcher breeding season and buffers or other protection measures to be implemented if active nests are identified. With implementation of mitigation measure BIO-2, impacts to coastal California gnatcatcher nesting would be less than significant. Given the potential impacts to a federally-listed species, consultation with the USFWS under Section 7 of the Endangered Species Act would also be required prior to Project implementation.

In addition to coastal California gnatcatcher habitat, the Project proposes the removal of vegetation which could provide suitable nesting habitat for other birds and raptors protected under the MBTA and California Fish and Game Code (CFG Code). Proposed vegetation clearing could result in direct impacts to nesting birds if the removal or trimming of vegetation were to occur during the bird nesting season (generally January 15 to September 15, including raptors). Such impacts to nesting birds would be in violation of the MBTA and the CFG Code and would be considered potentially significant. In addition, indirect effects to protected nesting birds and raptors could occur as a result of construction noise such that the disturbance results in nest abandonment or nest failure. Indirect impacts to nesting birds would also be considered potentially significant. Mitigation measure BIO-3 would require completion of nesting bird surveys prior to vegetation removal or trimming during the breeding season of January 15 to September 15 and, if active nests are identified, implementation of no-work buffers around active nests. With implementation of mitigation measure BIO-3, potentially significant impacts on nesting birds and raptors would be reduced to a less than significant level.

Orange-throated whiptail lizard was observed in sage scrub habitat during Project surveys. No individual whiptail lizards are expected to be affected by the Project due to their ability to disperse into the adjacent habitat. While the majority of sage scrub habitat would be avoided, the edge of this habitat would be removed by the Project. Orange-throated whiptail lizard is relatively widespread throughout the Project region; therefore, removal of a small area of habitat and possibly one or two individuals (although not anticipated) would not jeopardize the status of the species in the region or directly contribute to the future elevated listing of the species. Habitat creation, restoration/enhancement, and other habitat-based mitigation would result in no net loss of habitat for this species. Therefore, impacts to orange-throated whiptail are considered less than significant.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. Natural communities on the Project site include Riversidian Sage Scrub, Encelia Scrub, Southern Willow Scrub, and Herbaceous Wetland. Developed or disturbed land does not meet the definition of sensitive natural communities. The natural communities within the Project site are not considered sensitive natural communities based on global and state rankings; however, because the Riversidian sage scrub and Encelia scrub were found to support the federally-threatened coastal California gnatcatcher, these communities are considered sensitive natural communities under CEQA. Additionally, as wetland and riparian habitats, southern willow scrub and herbaceous wetland are considered sensitive and potentially jurisdictional.

The Project would result in direct, permanent impacts to approximately 0.70 acre of sage scrub (i.e., Riversidian and Encelia scrub) and approximately 0.01 acre of herbaceous wetland vegetation considered sensitive natural communities. While identified in the biological survey area, direct impacts to southern willow scrub are not proposed. Permanents impacts to the sensitive natural communities would be considered potentially significant. As provided in mitigation measure BIO-1, sage scrub habitat would be replaced at a 1:1 ratio. Mitigation measure BIO-4 would require herbaceous wetland habitat also be replaced at a 1:1 ratio through on-or off- site habitat mitigation. With implementation of mitigation measures BIO-1 and BIO-4, sensitive natural communities permanently impacted by the Project would be replaced and impacts would be less than significant. The proposed Project impacts to sensitive natural communities and associated mitigation requirements are summarized in Table 4, Project Impacts to Sensitive Natural Communities.

Table 4
PROJECT IMPACTS TO SENSITIVE NATURAL COMMUNITIES

Vegetation Community or Land Cover Type	Project Impact Acres[1]	Mitigation Ratio	Mitigation Required[1]
Riversidian sage scrub (including disturbed)	0.01	1:1	0.01
Encelia scrub (including disturbed)	0.69	1:1	0.69
Herbaceous wetland	0.01	1:1	0.01
TOTAL	**0.71**	**-**	**0.71**

[1] Acreages rounded to the nearest 0.01 acre. Impacts are associated with the demolition/removal of existing facilities and the construction of new facilities. Impacts do not include temporary laydown areas.

In addition to the impacts provided in Table 4, approximately 0.06 acre of disturbed Riversidian sage scrub would be temporarily impacted by Project laydown and staging. No grading would occur in this laydown area. Following construction, this area would be replanted, as necessary, to reflect the pre-Project habitat or better. Thus, temporary impacts from the use of the laydown area are considered less than significant.

As portions of the Project limits are bordered by sensitive natural communities where construction is currently not anticipated, potential direct impacts could also occur if construction work inadvertently extends beyond the authorized work limits. To avoid such impacts on sensitive natural communities located adjacent to the proposed work areas, EVMWD would implement BMPs from the required SWPPP for the Project. With the implementation of BMPs and adherence to the Project's SWPPP, no impact to sensitive natural communities located adjacent to the Project would occur.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant with Mitigation Incorporated. Based on the findings from the jurisdictional delineation, the portion of the CLWTP at the shore of Canyon Lake includes southern willow scrub, herbaceous wetland, and open water, which are considered potentially jurisdictional aquatic resources. Two non-jurisdictional features, an ephemeral pool and a swale, were observed on the Project site and determined not to be jurisdictional features based on the pool's lack of an upstream/downstream connection or vegetation and the swale's human-made characteristic and lack of an ordinary high-water mark (OHWM), bed, or bank.

Potential waters of the U.S. identified within the Project site include areas mapped as southern willow scrub, herbaceous wetland, and open water. Canyon Lake does not have a standard water elevation line that represents the OHWM; therefore, the elevation of the water levels of Canyon Lake on the day of the surveys (1,382 feet above mean sea level) was considered to represent the OHWM for the purposes of potential jurisdictional resource delineation. The portion of habitats below the OHWM were considered jurisdictional non-wetland waters of the U.S. subject to regulation by the U.S. Army Corps of Engineers (USACE). No wetland waters of the U.S. were identified at the Project site.

Waters of the State subject to RWQCB jurisdiction pursuant to Section 401 of the Clean Water Act include the waters of the U.S. identified above and the portion of southern willow scrub and herbaceous wetland vegetation occurring within the lake bank above the ordinary OHWM. Potential resources subject to the jurisdiction of the California Department of Fish and Wildlife (CDFW) are consistent with the resources described as waters of the U.S./State. Project impacts to the identified jurisdictional aquatic resources are presented below in Table 5, Impacts to Potentially Jurisdictional Resources.

Table 5
IMPACTS TO POTENTIALLY JURISDICTIONAL AQUATIC RESOURCES[1]

Jurisdictional Areas	Project Impacts		Net Project Impacts[3]
	Demolition	Construction[2]	
U.S. Army Corps of Engineers (USACE)			
Non-wetland Waters of the U.S.: Southern willow scrub	-	-	-
Non-wetland Waters of the U.S.: Herbaceous wetland	<0.01	<0.01	0
Non-wetland Waters of the U.S.: Open water	0.02	0.02	0
USACE TOTAL	**0.02**	**0.02**	**0**
Regional Water Quality Control Board (RWQCB)			
Non-wetland Waters of the U.S./State: Southern willow scrub	-	-	-
Non-wetland Waters of the U.S./State: Herbaceous wetland	-	0.01	0.01
Non-wetland Waters of the U.S./State: Open water	0.02	0.02	0
Wetland Waters of the State Only: Southern willow scrub	-	-	-
Wetland Waters of the State Only: Herbaceous wetland	<0.01	<0.01	0
RWQCB TOTAL	**0.02**	**0.03**	**0.01**

Jurisdictional Areas	Project Impacts		Net Project Impacts[3]
	Demolition	Construction[2]	
California Department of Fish and Wildlife (CDFW)			
CDFW Riparian: Southern willow scrub	-	-	-
CDFW Riparian: Herbaceous wetland	<0.01	0.01	<0.01
CDFW Lake: Open water	0.02	0.02	0
CDFW TOTAL	**0.02**	**0.03**	**0.01**

[1] Acreage rounded to the nearest 0.01.

[2] Impacts from demolition reflect the removal of existing structures whereas impacts from construction reflect the installation of new structures.

[3] Reflects overall impacts, considering demolition/removal would replace resources whereas construction would remove resources.

As presented in Table 5, the Project would result in direct impacts to habitat considered to be jurisdictional (i.e., herbaceous wetland and open water). In whole, these impacts consist of approximately 0.02 acre of demolition (i.e., removal of existing WTP structures) and installation of approximately 0.03 acre of new structure. Project impacts via demolition would restore jurisdictional resources whereas construction of new structures would remove resources. Therefore, overall net impacts to jurisdictional resources would be 0.01 acre, consisting of CDFW- and RWQCB-jurisdictional herbaceous wetland. Impacts to approximately 0.01 acre of herbaceous wetland would be considered potentially significant. Mitigation measure BIO-4 requiring the replacement of herbaceous wetland habitat at a 1:1 ratio would reduce this impact\ to a less than significant level.

Within open water, the Project would remove the intake pumps, barges, floating walkway, old intake structure, and associated pipelines and would replace these structures with a single gangway and barge structure with four submersible intake pipelines. The Project would result in fewer structures (i.e., less obstruction) within the open water than in the existing condition, which would ultimately result in an overall gain to open water habitat. Thus, while work in Canyon Lake (non-wetland waters of the U.S.) requires coordination with the USACE, impacts to open water would be less than significant.

Based on the implementation of BMPs and adherence to the Project's SWPPP, indirect impacts to potentially jurisdictional resources are not expected to occur. Project compliance with the Clean Water Act and CFG Code would be required; thus, coordination with USACE, RWQCB, and CDFW would occur and corresponding regulatory permitting would be completed if determined to be required by USACE, RWQCB, and/or CDFW. Mitigation prescribed by these agencies as a result of the permitting process would be required to be implemented by the EVMWD. Based on the proposed impacts to resources anticipated to be jurisdictional and implementation of mitigation measure BIO-4, impacts to protected wetlands would be less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant Impact. Wildlife corridors connect isolated habitats and allow the movement or dispersal of plant materials and animals. A corridor is a specific route that is used for the movement and migration of species; it may be different from a linkage in that it represents a smaller or narrower avenue for movement. A linkage is an area of land that supports or contributes to the long-term movement of animals and genetic exchange by providing live-in habitat that connects to other habitat areas.

Canyon Lake could be considered a habitat that serves as a linkage to support wildlife (primarily waterfowl) movement in the region. However, lands surrounding the Project site are mostly constrained by existing residential development and the Project site is largely characterized by the existing CLWTP development. The Project site does not serve as or contribute to any known or potential corridors or linkages facilitating wildlife movement. Therefore, while birds (including migratory species) may use trees and shrubs within the CLWTP, the Project site is not considered to substantially facilitate wildlife movement. Impacts would be less than significant.

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

No Impact. Tree removal, if required, may occur within the ornamental vegetation along the CLWTP entrance that occurs within the limits of the City of Lake Elsinore. The City of Lake Elsinore's tree ordinance does not apply to residential ornamental planted trees, with the potential exception of mature palm trees, which do not occur within the CLWTP property. The City of Canyon Lake does not have a tree ordinance. The Project would not result in the removal of native trees or mature palms. Therefore, the Project would not conflict with local policies or ordinances protecting biological resources and no impact would occur.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The Project site is located within the boundaries of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Specifically, the CLWTP is within the Sedco Hill subunit of the Elsinore Area of the MSHCP, within Criteria Cells 4553 and 4556. However, because EVMWD is not a signatory (i.e., non-enrolled entity) to the MSHCP, requirements prescribed by the MSHCP are not applicable to the Project. Although conformance with the MSHCP is not required, the information below is provided for general project context with the MSHCP. No impact would occur.

The MSHCP Criteria Cells in which the Project site occurs are expected to contribute to the assembly of Proposed Linkage 8, which follows the San Jacinto River from Canyon Lake to Lake Elsinore. The Project would not impact the San Jacinto River and would occur within the existing CLWTP area; therefore, the Project site is not within the targeted conservation area for the MSHCP Criteria Cells.

The Project site is not within the Narrow Endemic Plant Species, Criteria Area Species, mammal, or amphibian survey areas for the MSHCP. Nevertheless, focused surveys for rare plants were conducted and plants designated as protected under the MSHCP were not identified. The Project site is within the MSHCP burrowing owl survey area and was evaluated for suitable burrowing owl habitat, which was determined not to occur. Habitat for riparian/riverine plant species does occur on-site, but habitat for MSHCP Riparian/Riverine animal species does not occur on the Project site. The relatively small patch of open southern willow scrub (reflective of one tree) does not have the potential to support least Bell's vireo (Vireo bellii pusillus). The Project would not conflict with the species survey requirements of the MSHCP. As the MSHCP does not apply to the Project, no impact would occur.

Mitigation

BIO-1 **Coastal California Gnatcatcher Habitat Replacement**. Prior to the issuance of any construction permit for the Project, EVMWD shall mitigate impacts to 0.70 acre of sage scrub (i.e., encelia scrub and Riversidian sage scrub) at a 1:1 ratio. Total compensation for impacts to coastal sage scrub shall be 0.70 acre, provided on- and/or off-site via habitat creation, preservation, and/or purchase of appropriate habitat credits (including Encelia scrub and/or Riversidian sage scrub) from an off-site Mitigation Bank approved by the EVMWD and USFWS.

BIO-2 **Avoidance of Coastal California Gnatcatcher**. Prior to any disturbance, clearing, or grubbing of coastal California gnatcatcher habitat (i.e., encelia scrub and Riversidian sage scrub, including disturbed forms), EVMWD shall complete consultation with the USFWS in accordance with Section 7 of the Federal Endangered Species Act. Implementation of measures imposed as a result of the consultation with USFWS shall be required. Unless otherwise required by the USFWS, impacts to coastal California gnatcatcher shall be provided by habitat-based compensation on-site or off-site through the purchase of conservation Mitigation Bank credits as stipulated in BIO-1 above.

No clearing of Riversidian sage scrub or encelia scrub vegetation shall occur during the coastal California gnatcatcher breeding season, between February 15 to August 30. If construction activities are scheduled to occur during the nesting season for coastal California gnatcatcher (February 15 to August 30), EVMWD or its contractor for the Project shall retain a qualified biologist to conduct a pre-construction survey for coastal California gnatcatcher shall be conducted prior to Project implementation. The survey shall be conducted by a USFWS-permitted biologist for coastal California gnatcatcher and include surveying appropriate habitats (Riversidian Sage Scrub and Encelia Scrub) with the proposed work areas and surrounding 500-foot buffer, to the extent feasible. The biologist shall be retained by EVMWD or its contractor for the Project. A minimum of three focused surveys shall be conducted, on separate days, to determine the presence of coastal California gnatcatcher nesting activities. The surveys shall begin a maximum of seven days prior to Project impacts, with the last survey conducted the day immediately prior to the commencement of work. If no coastal California gnatcatcher nesting is detected, construction may be initiated. A Project biologist, retained by EVMWD or its contractor for the Project, shall be present during all clearing of appropriate habitats shown in Figure 11 of the biological resources study and as outlined in the Final Construction Plan Set. The Project biologist shall have the authority to halt work if necessary to protect coastal California gnatcatcher.

If an active coastal California gnatcatcher nest is found during the pre-construction survey, the Project biologist will postpone work within 500 feet of the nest and contact EVMWD, its contractor for the Project, and USFWS to discuss the best approach to avoid and/or minimize impacts to nesting coastal California gnatcatcher (such as sounds walls, noise monitoring, no work zones, other work restrictions, etc.) acceptable to USFWS. Following discussion with USFWS, work may be initiated subject to the implementation of the agreed-upon approach.

BIO-3 **Avoidance of Nesting Birds and Raptors.** Project activities requiring the removal and/or trimming of vegetation or demolition of structures suitable for nesting birds shall occur outside of the general bird and raptor breeding season (January 15 to September 15). To prevent impact to an active nest, a biologist retained by EVMWD or it's contractor for the project shall conduct

a pre-activity nesting bird survey within three days prior to the activities to confirm the presence or absence of active bird (including raptor) nests. If no active bird or raptor nests are found by the biologist, then the activities shall proceed. If an active bird or raptor nest is found, then vegetation removal and/or trimming activities at the nest location shall not be allowed and no-work buffers shall be implemented as follows: 100 feet around non-listed active passerine (perching birds and songbirds) nests and 500 feet around active raptor nests. The buffers may be reduced, if appropriate, and as directed by the Project biologist. The buffers shall be respected and maintained until the end of the breeding season or until the Project biologist has determined that the birds have fledged and are no longer reliant upon the nest for survival.

BIO-4 Compensatory Mitigation for Impacts to Herbaceous Wetland. EVMWD shall compensate for Project impacts to herbaceous wetland as follows: mitigation for impacts to 0.01 acre herbaceous wetland shall be provided at a minimum 1:1 ratio consisting of 1:1 establishment/ re-establishment, on-site or off-site preservation, or purchase of appropriate credits (i.e., like-kind habitat or better) from a local mitigation bank. Proposed establishment/re-establishment, on-site or off-site preservation shall be identified and approved by EVMWD prior to Project impacts to herbaceous wetland. If mitigation bank credits are selected, such credits shall be acquired by EVMWD prior to Project impacts to herbaceous wetland. Mitigation shall not occur at levels below the ratios described above unless otherwise conditioned in permits and/or discretionary approvals issued by USACE, RWQCB, and/or CDFW, as applicable.

V. Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

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

No Impact. The following discussion below is based on the Historical Resource Evaluation Report (HRER) prepared by HELIX (2023c), attached to this Initial Study as Appendix C. The HRER included a literature review and archival research, a review of historic aerials and maps, and a site visit to photograph key structures.

HELIX staff requested a record search of the California Historical Resources Information System from the Eastern Information Center (EIC) on January 6, 2023, which was received on April 11, 2023. The records search covered a one-mile radius around the Project area. A review of the California Historical Resources and the state Office of Historic Preservation historic properties directories was also conducted. HELIX

Senior Architectural Historian Teri Delcamp, M.A., performed a desktop review of cultural resources survey photos and conducted a site visit to assess the structures and take additional photographs on April 13, 2023.

One resource, a foundation and historic trash scatter, was identified by the EIC search as within the Project area but was determined to lie outside of the Project boundary upon further review. Structures within the CLWTP were identified in imagery and confirmed by EVMWD building plans as beginning to be constructed in 1955 with modifications occurring between 1963 and 2004.

The original CLWTP completed in December 1956 consisted of an intake pump, an Infilco Accelator and filtering system, a steel storage tank, chemical feed building, and thousands of feet of pipelines connecting the CLWTP to end users. Modifications have been made over time to virtually all components of the CLWTP. Based on research conducted for the HRER, the only component that appeared to be original and over 45 years in age, dating to 1956 with an addition in 1977, was the chemical feed area 1 components and building. Therefore, this was the only area of the CLWTP facility evaluated for historic significance in accordance with the criteria of the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR).

Chemical feed area 1 consists of the chemical feed building and area 1, the static mix pipe, the rapid mix enclosure, and the electrical building at the intake pumps. These components are functional in nature and have not made significant contributions to history. They are also not related to significant or important persons and are not representative of an artistic style or creative individual. Lastly, no evidence indicated that these components could be a significant source of information about history. Therefore, as the chemical feed area 1 components are not significant historical resources under the criteria of the NRHP and CRHR, no historical resources defined by CEQA or the National Historic Preservation Act are present on the site. No impact to historical resources would occur with Project implementation.

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

Less Than Significant with Mitigation Incorporated. The following discussion below is based on the Cultural Resources Survey prepared by HELIX (2023d), attached to this Initial Study as Appendix D. The Cultural Resources Survey included a records search, Sacred Lands File search, Native American outreach, a review of historic aerial photographs and maps, and a pedestrian survey.

The EIC records search discussed in item V.a identified 14 previously recorded cultural resources within a one-mile radius of the Project site and one of these, the foundation and historic trash scatter, within the Project boundaries. However, based upon a review of topographic maps and aerial photographs, it was determined that this resource lies outside the project area. No cultural material was observed during the pedestrian survey of the Project area. While no archaeological resources were identified within the Project site by the records search and pedestrian survey, the Native American Heritage Commission (NAHC) has identified the area as having cultural significance and the Project area is considered sensitive for cultural resources. Based on these factors, the Project could have potentially significant impacts to unknown archaeological resources.

The cultural resources survey recommended that an archaeological and Native American monitoring program be implemented for initial ground-disturbing activities, including brushing/grubbing, grading, trenching, excavation, etc. This monitoring program is detailed in mitigation measures CUL-1 through

CUL-9 and would include attendance by the archaeologist and Native American monitor(s) at a preconstruction meeting and 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 Project archaeologist would coordinate with representatives of the Monitoring Tribes and with EVMWD and SWRCB staff to develop and implement appropriate avoidance, mitigation, or treatment measures. With implementation of mitigation measures CUL-1 through CUL-9, impacts to archaeological resources would be less than significant.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact. The Project site is not located within or near a formal cemetery and is not known to be located on a burial ground. Should unanticipated human remains be uncovered during construction, the Project would comply with regulations to ensure proper treatment of the remains. The County Coroner would be contacted and if the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the NAHC, would be contacted in order to determine proper treatment and disposition of the remains. All requirements of Health & Safety Code Section 7050.5 and Public Resources Code Section 5097.98 would be followed. Impacts would be less than significant.

Mitigation

Implementation of mitigation measures CUL-1 through CUL-9 would reduce potential impacts to archaeological resources to a less-than-significant level.

CUL-1 Monitor Ground-disturbing Activities. At least 30 days prior to grading, excavation and/or other ground-disturbing activities on the Project site, EVMWD shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology and listed on the Register of Professional Archaeologists or the County of Riverside list of qualified archaeologists to monitor ground-disturbing activities.

CUL-2 Tribal Monitoring Agreements. At least 30 days prior to grading, excavation, and/or other ground-disturbing activities EVMWD shall contact both the Pechanga Band of Luiseño Indians and Soboba Band of Luiseño Indians to notify each Tribe of excavation activities and coordinate with the Tribes to develop Monitoring Agreements. The Agreements shall address the designation, responsibilities, and participation of Native American tribal monitors during excavation and other ground disturbing activities and construction scheduling.

CUL-3 Develop a Cultural Resources Monitoring Plan. The Project Archaeologist, in consultation with the Monitoring Tribe(s) and EVMWD, shall develop a Cultural Resources Monitoring Plan to address the details, timing and responsibility of archaeological and cultural activities that will occur on the Project site. Details in the Plan shall include:

a. Project grading and development scheduling;

b. The coordination of a monitoring schedule as agreed upon by the Monitoring Tribe(s), the Project archaeologist, and EVMWD; and

c. The protocols and stipulations that EVMWD, the Monitoring Tribe(s) and the Project archaeologist will follow in the event of inadvertent cultural resources discoveries, including newly discovered cultural resources.

CUL-4 Cultural Resources Sensitivity Training. Prior to grading, excavation and/or other ground-disturbing activities on the Project site, the Project archaeologist and the Monitoring Tribe(s) shall conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. EVMWD's construction manager shall ensure that construction personnel are made available for and attend the training and shall retain documentation demonstrating attendance.

CUL-5 Authority to Stop and Redirect Excavation. In accordance with the agreement required in Cul-2, the Project archaeologist and designated tribal monitor(s) assigned to the Project by the Luiseño Tribe(s) shall have the authority to stop and redirect excavation in order to evaluate the significance of archaeological resources discovered on the property.

CUL-6 Evaluation of Discovered Artifacts. All artifacts discovered at the development site shall be inventoried and analyzed by the Project archaeologist and Native American monitor(s). If artifacts of Native American origin are discovered, activities in the immediate vicinity of the find (within a 50-foot radius) shall stop. The Project archaeologist and Native American monitor(s) shall analyze the Native American artifacts for identification as everyday life and/or religious or sacred items, cultural affiliation, temporal placement, and function, as deemed possible. The significance of Native American resources shall be evaluated in accordance with the provisions of CEQA and shall consider the religious beliefs, customs, and practices of the Luiseño tribes. All items found in association with Native American human remains shall be considered grave goods or sacred in origin and subject to special handling.

CUL-7 Inadvertent Discovery of Resources. If inadvertent discoveries of subsurface archaeological/ cultural resources are discovered during grading, EVMWD and the Project archaeologist with the Monitoring Tribes shall assess the significance of such resources and shall meet and confer regarding the mitigation for such resources. The determination as to the significance or the mitigation for such resources will be based on the provisions of CEQA and shall take into account the religious beliefs, customs, and practices of the Monitoring Tribes.

CUL-8 Sacred Sites. All sacred sites, should they be encountered within the Project area, shall be avoided and preserved as the preferred mitigation, if feasible.

CUL-9 Final Archaeological Report. The Project archaeologist shall prepare a final archaeological report within 60 days of completion of the Project. The report shall follow Archaeological Resource Management Report Guidelines (California Office of Historic Preservation 1990) and EVMWD requirements and shall include at a minimum: a discussion of monitoring methods and techniques used, the results of the monitoring program including artifacts recovered, an inventory of resources recovered, updated Department of Parks and Recreation forms, if any, and any other site(s) identified, final disposition of the resources, and any additional recommendations. A final copy shall be submitted to EVMWD, the Eastern Information Center, and the Monitoring Tribe(s).

VI. Energy

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

The discussion below is based on the Air Quality, Greenhouse Gas Emissions, and Energy Technical Report prepared by HELIX (2023a), attached to this Initial Study as Appendix A.

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact. Construction activities would require the use of diesel fuel, gasoline, and other fuels. Energy use during construction typically involves the use of motor vehicles for transportation of workers and materials and the use of motorized equipment for direct construction actions such as moving soil and demolishing structures. The estimated combined construction energy that would be used during construction activities is shown in Table 6, *Construction Energy Use*.

Table 6
CONSTRUCTION ENERGY USE

Source	Diesel (gallons)	Gasoline (gallons)	Total Energy (MMBTU)
Off-Road Construction Vehicles	22,709	-	3,157
On-Road Construction Vehicles	7,256	3,726	1,471
TOTAL[1]	29,966	3,726	4,627

Source: HELIX 2023a
[1] Totals may not sum due to rounding.
MMBTU = million British thermal units

Construction activities are not anticipated to result in an inefficient use of energy. Since the use of gasoline and diesel fuel would be a significant portion of construction costs, contractors and equipment operators would minimize the use of fuel within the constraints of Project requirements. Construction equipment would be maintained in optimal working order and rated energy efficient and on-site vehicle idling would be minimized to reduce the use of gasoline and diesel.

Due to the short-term nature of the construction activities and the total amount of diesel and gasoline fuel anticipated to be consumed, the Project's consumption of energy (primarily diesel fuel) during construction would not represent a substantial demand on energy resources or result in the need to develop any new, or alter any existing, energy production or distribution facilities. In addition,

construction-related energy would not be used in a wasteful, inefficient, or unnecessary manner, and impacts would be less than significant.

Energy use associated with Project operation would result from increased electricity use and a minor increase in vehicle trips. The Project is anticipated to consume 3,482 megawatt-hours of electricity per year. The purpose of the Project is to make necessary improvements to the existing CLWTP, as well as additional infrastructure necessary to accommodate planned growth in the area. Energy usage would be limited to operations necessary for the treatment of water and transportation of employees to the CLWTP. Therefore, the Project would not consume energy in a wasteful, inefficient, or unnecessary manner during operation, and impacts would be less than significant.

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

Less Than Significant Impact. The purpose of the Project is to make necessary improvements to the existing CLWTP, as well as additional infrastructure necessary to accommodate planned growth in the area. Energy usage would be limited to operations necessary for the treatment of water. By improving upon an existing local source for potable water, the Project would reduce reliance on imported water, thereby reducing energy demand associated with having to pump water from across the state for consumption. The Project's demand on energy resources and services would not be anticipated to require the construction of new energy facilities or require improvements to local infrastructure. Therefore, impacts related to inconsistency with adopted plans and policies and energy waste would be less than significant.

VII. Geology and Soils

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv. Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

The discussion below is based in part on the Geotechnical and Geologic Evaluation prepared by Leighton Consulting, Inc. (Leighton Consulting, Inc. 2018), attached to this Initial Study as Appendix E.

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

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

No Impact. The Project is not within an Alquist-Priolo Fault Zone (Leighton Consulting, Inc. 2018). In addition, the Project site is not within a County Fault Zone or the trace of another known active or inactive fault. Since there are no known faults within the Project site, ground rupture would not be anticipated to occur at the site and no impact would occur.

ii. Strong seismic ground shaking?

Less Than Significant Impact. While there is no fault located within the Project site, the Project's location within a geologically active region indicates that there is potential for ground shaking at the site. Structures associated with the Project would be constructed in accordance with applicable California Building Code requirements, which would reduce the potential for damage to people or structures during ground shaking events. Given compliance with applicable building requirements, impacts related to strong ground shaking would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

No Impact. Liquefaction occurs when loose, water-saturated sediments lose strength and fail during strong ground shaking. Areas anticipated to experience liquefaction can be predicted based on the

presence of shallow groundwater, loose soils, and probable earthquake shaking. The County has prepared maps illustrating zones of liquefaction potential, from very low to high potential. The Project site is not mapped within a liquefaction potential area (County 2023). Therefore, it is not anticipated that ground failure, including liquefaction, would cause adverse effects to the Project. No impact would occur.

iv. Landslides?

No Impact. According to the Project's geotechnical evaluation, the proposed slope cuts would result in stable conditions(Leighton Consulting, Inc. 2018). If slopes steeper than 1.5:1 are proposed in the future, additional geologic mapping would be required to ensure slope stability. With incorporation of recommendations provided by the geologic evaluation, the Project would not create slopes or other features that would contribute to landslide potential. Therefore, no adverse effects related to landslides are anticipated and no impact would occur.

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

Less Than Significant Impact. Implementation of the proposed Project would increase the potential for erosion during construction due to the removal of stabilizing surfaces and grading activities. After completion of construction activities, these surfaces would be stabilized and there would not be a substantial risk of erosion in the Project site.

Short-term erosion and sedimentation impacts would be addressed through conformance with applicable elements of the NPDES Construction General Permit. Specifically, this would include implementing an approved SWPPP, which would include BMPs. Project-specific BMPs, examples of which are provided in Section 2.9, would be determined during the SWPPP process based on site-specific characteristics (soils, slopes, etc.).Typical erosion and sediment control measures that may be required include erosion control measures such as geotextiles, mats, fiber rolls, or soil binders; sediment controls such as silt fencing, fiber rolls, gravel bags, or other methods; compliance with dust control measures; and preparation and implementation of a Rain Event Action Plan. Other BMPs may be added during the SWPPP process to ensure the Project complies with applicable regulations.

Based on implementation of appropriate erosion and sediment control BMPs as part of, and in conformance with, the Project SWPPP and related City and NPDES requirements, potential erosion and sedimentation impacts from implementation of the proposed Project would be less than significant.

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

Less Than Significant Impact. As discussed above, the Project is not anticipated to be subject to liquefaction or landslides. The Project site is also not located in a subsidence zone and would not be anticipated to experience lateral spreading or collapse (County 2023). The Project site is stable and would not become unstable as a result of the Project. Therefore, impacts related to potential hazards due to instability would be less significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact. Surface soils within the Project site were tested and found to have very low expansion potential and a negligible concentration of soluble sulfates (Leighton Consulting, Inc. 2018). Therefore, no damage to the proposed Project components is anticipated to result from the presence expansive soils. No impact would occur.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The Project would utilize existing sewer infrastructure and does not propose the installation of septic tanks or other alternative waste water disposal systems. No impact would occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact. To assess the Project's potential to impact paleontological resources, a Paleontological Resources Assessment was prepared by Stantec (2023) and is attached to this Initial Study as Appendix F. The assessment concluded that the Project area is underlain by phyllite of an unknown age. Phyllite forms at high temperatures and pressures. Given the high temperatures required for phyllite formation, it is unlikely to preserve paleontological resources and was assessed as having no potential to contain paleontological resources (Stantec 2023). Since the Project site consists of a subsurface geologic unit with no potential to contain paleontological resources, the Project would not directly or indirectly destroy unique paleontological resources and no impact would occur.

VIII. Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

The discussion below is based on the Air Quality, Greenhouse Gas Emissions, and Energy Technical Report prepared by HELIX (HELIX 2023a), attached to this Initial Study as Appendix A.

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

Less Than Significant Impact. Construction of the Project would result in GHG emissions generated by vehicle engine exhaust from construction equipment and worker commuting trips. Project operations would result in GHG emissions from vehicle trips and indirect GHG emissions from electricity generation. GHG emissions resulting from these sources were calculated in CalEEMod. In the absence of a quantitative threshold established by EVMWD or the City, the quantitative analysis provided herein relies upon the SCAQMD adopted screening threshold for industrial facility projects of 10,000 metric tons (MT) carbon dioxide equivalent (CO_2e; SCAQMD 2008). The estimated construction GHG emissions for the Project are shown in Table 7, *Construction GHG Emissions*. For construction emissions, SCAQMD recommends that the emissions be amortized (i.e., averaged) over the anticipated lifespan of a project (30 years) and added to operational emissions.

Table 7
CONSTRUCTION GREENHOUSE GAS EMISSIONS

Year	Emissions (MT CO_2e)
2024	501.0
2025	195.8
2026	50.6
Total[1]	**747.5**
Amortized Construction Emissions[2]	*24.9*

Source: HELIX 2023a
[1] Totals may not sum due to rounding.
[2] Construction emissions are amortized over 30 years in accordance with SCAQMD guidance.
MT = metric tons; CO_2e = carbon dioxide equivalent

As shown in Table 7, total GHG emissions associated with construction of the Project are estimated at 747.5 MT CO_2e. Averaged over 30 years, the proposed construction activities would contribute approximately 24.9 MT CO_2e emissions per year. The Project's net annual GHG emissions, including amortized annual construction emissions, are shown in Table 8, *Operational Greenhouse Gas Emissions*, for comparison with the SCAQMD threshold.

Table 8
OPERATIONAL GREENHOUSE GAS EMISSIONS

Emission Sources	2027 Emissions (MT CO_2e)
Mobile	42.5
Operational Energy	550.0
Construction (Annualized over 30 years)	24.9
Project Total[1]	**617.6**
SCAQMD Screening Threshold	**10,000**
Exceed Threshold?	**No**

Source: HELIX 2023a
[1] Totals may not sum due to rounding.
MT = metric tons; CO_2e = carbon dioxide equivalent

As shown in Table 8, the Project emissions, including amortized construction emissions, would not exceed the industrial facility SCAQMD GHG screening threshold of 10,000 MT CO_2e per year. Therefore, impacts related to greenhouse gas emissions are considered less than significant.

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

Less Than Significant Impact. There are numerous state plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall state plan and policy is AB 32, the California Global Warming Solutions Act of 2006. The initial quantitative goal of AB 32 was to reduce GHG emissions to 1990 levels by 2020. Senate Bill (SB) 32 would require further reductions of 40 percent below 1990 levels by 2030. AB 1297 would require additional reduction to 85 percent below 1990 levels by 2045. Because the Project's operational year is post-2020, the Project aims to reach the quantitative goals set by SB 32 and AB 1297. Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the low carbon fuel standard, 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 and the proposed Project would not conflict with those plans and regulations.

The CARB Scoping Plan, approved in 2008 and updated in 2014, 2017, and 2022, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to individual projects, nor is it intended to be used for project-level evaluations. Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy use, high-global warming potential GHGs in consumer products) and changes to the vehicle fleet (e.g., Low Carbon Fuel Standard), among others. The proposed Project would not conflict with implementation of the measures identified in the Scoping Plan.

SCAG's 2020-2045 RTP/SCS is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. Because the Project is not growth inducing, this type of consistency analysis does not apply. Only two goals from the SCAG's 2020-2045 RTP/SCS are applicable to the Project: (1) to reduce GHG emissions and improve air quality and (2) adapt to a changing climate and support an integrated regional development pattern and transportation network. The Project is consistent with these goals, as the Project would not exceed SCAQMD thresholds for GHG or criteria pollutant and would support the use of local water supplies in place of more energy intensive imported water.

By improving upon an existing local source for potable water, the Project would reduce reliance on imported water, thereby reducing GHG emissions associated with having to pump water from across the state for consumption. The Project would not conflict with applicable GHG emission reduction plans, including CARB's Scoping Plan and SCAG's RTP/SCS. Impacts would be less than significant.

IX. Hazards and Hazardous Materials

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

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

Less Than Significant Impact. Construction activities may involve the limited transport, storage, use, and/or disposal of hazardous materials, such as for the fueling and servicing of construction equipment onsite. These activities would be short-term or one-time in nature and would be subject to federal, state, and local health and safety regulations, which would minimize hazards related to the use of these materials.

Long-term operation of the Project would involve the transport, use, and disposal of hazardous materials required during the water treatment process. In accordance with Chapter 6.95, Division 20 of the Health and Safety Code, a Health and Safety Plan would be prepared for the Project and would include a description of hazardous materials on-site, a site map, emergency response procedures, and

training plans. Compliance with this plan, along with adherence to applicable federal, state, and local health and safety regulations, would reduce potential hazards related to hazardous materials. The Project would not result in a significant hazard related to the transport, use, or disposal of hazardous materials and impacts would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. As discussed above in item IX.a, limited amounts of hazardous materials would be used during construction; however, these materials would be used and stored in accordance with applicable regulations that would limit the potential for their accidental release. During Project operation, the use of hazardous materials would be required for the water treatment process. Compliance with the required Health and Safety Plan and applicable regulations related to the use and storage of hazardous materials would minimize the potential for upset or accident conditions at the Project site. Therefore, the Project would not create a significant hazard to the public or the environment due to the release of hazardous materials and impacts would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. There are no schools located within one-quarter mile of the Project site. The nearest school, Tuscany Hills Elementary School, is located approximately one mile northwest of the CLWTP. Therefore, the Project would not emit hazardous emissions or result in handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. No impact would occur.

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

No Impact. The Department of Toxic Substances Control (DTSC) EnviroStor database and the SWRCB GeoTracker databases were consulted to identify if the Project site or surrounding nearby properties are on a list compiled pursuant to Government Code 65962.5. No sites were recorded in EnviroStor or GeoTracker within the Project site or within a 1,000-foot radius of the site (DTSC 2023; SWRCB 2023). As such, the Project would not create a significant hazard to the public or the environment and no impact would occur.

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

No Impact. The nearest airport to the Project site is the Perris Valley Airport, located approximately 6.5 miles northeast of the site. The airport land use plan for the Perris Valley Airport includes compatibility and noise contours, neither of which include the CLWTP (Riverside County Airport Land Use Commission 2011). Therefore, airport activity associated with airports in the Project region would not result in a safety hazard or excessive noise for people working at the CLWTP. No impact would occur.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. Construction and operation of the Project would primarily occur within the existing CLWTP, which would not interfere with an emergency evacuation route. An off-site connection to the existing water line in Via De La Valle would require temporary construction activity within a public ROW; however, vehicle movement on either side of this section of Via De La Valle would be able to continue without impairments to emergency evacuation towards Summerhill Drive. In addition, the construction contractor would be required to implement a traffic control plan, which would include measures to maintain acceptable emergency response and evacuation conditions. After construction, no above-ground Project components would be located outside of the CLWTP facility and within emergency evacuation routes. Emergency access to the CLWTP would be available from Via De La Valle and Longhorn Drive, as is the case under existing conditions. The Project would not interfere with emergency response or evacuation plans and impacts would be less than significant.

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

Less Than Significant Impact. A small area at the southern side of the Project site is recommended by the California Department of Forestry and Fire Protection (CAL FIRE) as a Very High Fire Hazard Severity Zone (VHFHSZ) for the City (CAL FIRE 2009). Implementation of standard brush management practices, as described in Section 2.9.2, during construction would reduce the potential for construction activities to result in wildland fire risks. Permanent Project components would be constructed in accordance with applicable requirements of the California Fire Code and would include sprinkler systems to prevent the spread of fire. The Project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires and impacts would be less than significant.

X. Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
	i. Result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
	ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
	iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional resources of polluted runoff?	☐	☐	☒	☐
	iv. Impede or redirect flood flows?	☐	☐	☒	☐
d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact. The Project has the potential to result in water quality impacts due to construction-related discharges in the short-term and runoff from the Project site during long-term operation. The Project would disturb more than one acre of land and would be subject to the NPDES Construction General Permit, which requires the implementation of a SWPPP. The Project's SWPPP would be submitted to the Santa Ana RWQCB and would require implementation of BMPs to prevent polluted runoff during construction. The Project would include LID BMPs that would treat runoff and ensure compliance with the MS4 permit. Compliance with the SWPPP during construction and MS4 permit conditions during operation would prevent degradation of surface and ground water quality as a result of the Project. Impacts related to water quality would be less than significant.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. The Project would not require groundwater withdrawal for Project operations, as the CLWTP draws water for treatment from Canyon Lake. The amount of impermeable surface at the CLWTP would increase under Project conditions; however, the Project would be constructed within an approximately 1.1-acre portion of the 12.6-acre CLWTP and would not be of a scale to substantially impede groundwater recharge. Therefore, the Project would not decrease groundwater supplies or substantially interfere with groundwater recharge and impacts would be less than significant.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact. During construction, the removal of paved surfaces and earth-moving activities would expose soils, which may result in erosion or siltation on- or off-site. During construction, implementation of the BMPs required by the Project's SWPPP would prevent significant impacts related to erosion. Upon completion of construction, surfaces would be landscaped or paved, which would minimize the potential for erosion during project operation. Impacts related to erosion and siltation would be less than significant.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off- site?

Less Than Significant Impact. The Project site would be graded to generally maintain the existing flow pattern of the CLWTP. Runoff from the northwestern portions of the Project site would flow south from the hills and then towards the east. Runoff from the southern portion of the Project site would flow to the southwest. Some currently undeveloped areas would be paved while some currently paved areas would become impervious and finished with decomposed granite. As such, no substantial change in the amount of surface runoff from the Project area is anticipated and the Project would not result in flooding on- or off-site.

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional resources of polluted runoff?

Less Than Significant Impact. As discussed in item X.c.ii above, the Project would not result in changes to the amount of runoff from the Project area. The Project would also not contribute pollutants to the Project area that would result in polluted runoff, as BMPs would treat runoff from the Project area in accordance with applicable regulations. During construction activities, BMPs would be implemented in accordance with the SWPPP to prevent substantial polluted runoff from entering the stormwater drainage system. Impacts would be less than significant.

iv. Impede or redirect flood flows?

Less Than Significant Impact. The land portion of the CLWTP is not within a special floodplain designated by the Federal Emergency Management Agency (FEMA). The area of the CLWTP within Canyon Lake, including the floating barge with intake pump, is designated by FEMA as Zone A, which is a 100-year floodplain area with no determined base flood elevation (FEMA 2008). The Project improvements within Zone A would not alter the potential for flooding, as they would consist of replacing the barge and intake pumps. These improvements would not impede or redirect flood flows and impacts would be less than significant.

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

Less Than Significant Impact. As described in item X.c.iv, the portion of the Project site within Canyon Lake is within a FEMA-designated floodplain. The Project site is approximately 26 miles from the Pacific Ocean and would not be subject to tsunamis. Based on the Project's location adjacent to Canyon Lake, a seiche could occur during a ground shaking event. Hazardous materials containing pollutants would be used and stored in accordance with applicable regulation that would minimize the potential for hazardous pollutants to be released into water supplies in the event of Project inundation during construction or operation. Impacts would be less than significant.

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

Less Than Significant Impact. The Project would comply with the Water Quality Control Plan for the Santa Ana River Basin and NPDES Stormwater Program by implementing a SWPPP listing BMPs to prevent construction pollutants and products from violating any water quality standards or waste discharge requirements (Santa Ana RWQCB 1995). During operation, BMPs compliant with the MS4 Permit and outlined in a DAMP and LIP would support attainment of the Water Quality Control Plan for the Santa Ana River Basin. The Project site is also located directly west of the plan area for the Elsinore Valley Subbasin Groundwater Sustainability Plan (EVMWD 2022). The Project would not interfere with groundwater recharge or otherwise conflict with the Groundwater Sustainability Plan. The Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Impacts would be less than significant.

XI. Land Use and Planning

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Cause significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☒	☐	☐

a) Physically divide an established community?

No Impact. The Project would improve the CLWTP within the existing facility footprint. No new, aboveground components would be constructed outside of the current facility area such that existing communities would be physically divided. No impact would occur.

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

Less Than Significant with Mitigation Incorporated. The Project would occur within the existing CLWTP with the exception of an off-site water connection in the public ROW on Via De La Valle. The proposed improvements to the CLWTP would maintain the same use of the site consistent with its land use and zoning designations as a community facility. No changes to land use types are proposed as part of the Project.

As described throughout this Initial Study, the Project has the potential to result in a conflict with policies and/or regulations adopted for the purpose of avoiding or mitigating environmental impacts. Project impacts sensitive species and habitats protected by local, state, and federal policies would be mitigated in accordance with the MSHCP and permitting requirements of applicable agencies. Therefore, with implementation of mitigation measures BIO-1 through BIO-4, the Project would comply with policies related to biological resource protection.

The Project proposes work within the ROW for the purposes of connecting to the water main in Via De La Valle. These activities have the potential to result in impacts to circulation and require adherence to a traffic control plan, which would reduce the potential for adverse impacts related to circulation hazards and ensure consistency with local traffic policies. After construction of the pipeline connection is completed, the ROW surface would be returned to its pre-Project conditions and Via De La Valle would resume functioning as outlined in the General Plan Circulation Element. As evaluated in Section 4.XIII, construction activities and stationary sources have the potential to generate noise at nearby residences and mitigation measures NOI-1 and NOI-2 would be incorporated to ensure impacts related to noise remain less than significant and in compliance with applicable codes.

The proposed Project would not result in changes to land uses and would not result in other land use policy conflicts. With implementation of the mitigation measures discussed above, impacts would be less than significant.

XII. Mineral Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact (a and b). Mineral Resource Zone (MRZ) categories are used by the State Geologist to classify the lands according to their potential to contain mineral resources. The Project site is designated as MRZ-3, which indicates areas containing mineral occurrences of undetermined mineral resource significance (County 2015). The City does not contain areas of MRZ-2, where adequate information indicates that significant mineral deposits are present (California Geological Survey 2014). The Elsinore Area Plan identifies the Temescal Canyon Wash as the area of the Elsinore Area with significant potential for mineral resource recovery (County 2021). The Project site is located approximately nine miles southeast of this area and would not preclude recovery of mineral resources. Furthermore, given the developed Project site and surrounding development, there is little to no potential for mineral resource recovery to occur within the Project site. The Project would not result in the loss of availability of mineral resources or a delineated mineral resource recovery site. No impact to mineral resources would occur.

XIII. Noise

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:					
a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b)	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

The discussion below is based on the Noise Technical Report prepared by HELIX (2023e), attached to this Initial Study as Appendix G.

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

Less Than Significant with Mitigation Incorporated. All noise level or sound level values presented herein are expressed in terms of decibels with A weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, with a specified duration, and maximum noise levels are expressed by the symbol L_{MAX}.

Four noise measurements were conducted at the Project site to evaluate current noise conditions, which exclude operation of the CLWTP. Noise levels on the Project site and adjacent to the proposed off-site connection location were measured to be between 44.6 and 50.1 dBA L_{EQ}.

Construction Noise

The City does not have construction-specific noise regulations; however, the amplified daytime noise limit of 80 dBA L_{MAX} contained in Canyon Lake Municipal Code Section 11.15.030 was considered in the Project's noise report for construction noise occurring at nearby residences. In addition, for off-site construction occurring in Via De La Valle in the City of Lake Elsinore, construction noise impacts were considered potentially significant if short-term (10 days or less) activities in residential areas would exceed 75 dBA L_{MAX} in accordance with Section 17.176.080.F of the Lake Elsinore Municipal Code.

The nearest residences to the construction area for the Project are those located within the Via de la Valle ROW, approximately 50 feet west of the proposed off-site water pipeline connection. The majority of Project construction would take place within and surrounding the existing CLWTP components, which are located approximately 290 feet from the nearest residences to the south and west. Table 9, *Construction Equipment Noise Levels*, provides the maximum and hourly noise levels at 50 and 290 feet for construction equipment anticipated to be required by the Project. These noise levels are conservative estimates that do not account for intervening topography and structures that may attenuate noise levels further.

Table 9
CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment	Hourly Percent Use	dBA L_{MAX} at 50 feet	dBA L_{EQ} at 50 feet	dBA L_{MAX} at 290 feet	dBA L_{EQ} at 290 feet
Backhoe	40	-	-	62.3	58.3
Compactor	20	-	-	68.0	61.0
Dump Truck	40	76.5	72.5	61.2	57.2
Excavator	40	80.7	76.7	65.4	61.5
Front End Loader	40	79.1	75.1	63.8	59.9
Grader	40	-	-	69.7	65.8
Jackhammer	20	-	-	73.6	66.6
Paver	50	77.2	74.2	62.0	58.9
Roller	20	80.0	73.0	64.7	57.7

Source: HELIX 2023e
dBA = A-weighted decibel; L_{MAX} = maximum noise level; L_{EQ} = hourly noise level

As shown in Table 9, a jackhammer is anticipated to be the loudest piece of construction equipment used for on-site construction and would generate a maximum noise level of 73.6 dBA L_{MAX} at 290 feet.

Therefore, at the nearest residential property, the City's amplified noise standard of 80 dBA L_{MAX} would not be exceeded during on-site construction and impacts would be less than significant.

Construction of the off-site water pipeline approximately 50 feet east of residential receptors is anticipated to result in maximum noise levels of 80.7 dBA L_{MAX} during the use of an excavator. Since construction in this location is anticipated to occur for fewer than 10 days, the applicable construction noise threshold is considered to be 75 dBA L_{MAX}. At 100 feet, an excavator was calculated to generate a maximum noise level of 74.7 dBA L_{MAX}. Therefore, off-site construction would not comply with the Lake Elsinore Municipal Code and impacts associated with construction noise within 100 feet of residences would be considered potentially significant. Mitigation measure NOI-1 would require noise control be installed during construction activity within 100 feet of residences and would reduce this impact to a less than significant level.

Approximately 48 one-way haul trips would also occur each day and would be routed through the existing CLWTP driveway, exiting onto Via De La Valle and traveling through the residential neighborhood. This would result in six haul truck passes per hour along Via De La Valle. While the addition of the proposed haul trips to a roadway with otherwise low traffic volumes may result in an increase in ambient noise levels, these trips would occur temporarily during the ten-week grading period. Based on the relatively small number of hourly trips and the temporary nature of grading operations, impacts related to construction haul trip noise would be less than significant.

Operational Noise

The Project's noise report assumed that prominent noise-generating equipment would include pumps and fans, of which three 200-hp pumps in the intake pump station, two 200-hp pumps and one 100-hp pump in the booster pump station, and two 3-hp cooling fans in each pump station, would be in operation at a given time. As the Project would be in constant operation and the City does not have property noise limits, significant impacts related to permanent Project noise were assessed in comparison with the City of Lake Elsinore nighttime noise limit of 40 dBA L_{EQ} at single-family residences.

The operational noise sources were modeled in CadnaA version 2022 and noise receivers were placed at the surrounding residential properties at a height of two meters (6.6 feet), as shown in Figure 11, *Noise Receiver Locations*. The resulting noise levels at 50 feet and each receiver location from the intake pump station, booster pump station, and the two sources combined are presented in Table 10, *Stationary Equipment Noise Levels without Noise Control*.

Table 10
STATIONARY EQUIPMENT NOISE LEVELS WITHOUT NOISE CONTROL

Receiver	Intake Pump Station (dBA L_{EQ})	Booster Pump Room (dBA L_{EQ})	Combined Sources (dBA L_{EQ})	Exceeds City of Lake Elsinore Noise Limit?
At 50 feet	63.4	60.4	-	
R1	19.2	45.7	**45.7**	**Yes**
R2	19.2	44.0	**44.0**	**Yes**
R3	18.8	41.3	**41.3**	**Yes**
R4	16.5	31.8	32.0	No

Receiver	Intake Pump Station (dBA L_{EQ})	Booster Pump Room (dBA L_{EQ})	Combined Sources (dBA L_{EQ})	Exceeds City of Lake Elsinore Noise Limit?
R5	24.1	25.6	27.9	No
R6	27.6	26.1	29.9	No

Source: HELIX 2023e
dBA = A-weighted decibel; L_{EQ} = hourly noise level.
Bold font indicates noise level exceeds City of Lake Elsinore nighttime noise limit of 40 dBA L_{EQ}.

As shown in Table 10, noise levels at residences located south of the CLWTP would exceed the nighttime noise level limit of 40 dBA L_{EQ} at the residences west of the site along Via de la Valle; therefore, the Project could result in potentially significant impacts related to permanent noise levels. Mitigation measure NOI-2 requires implementation of noise attenuation features at the booster pump station and flocculation mixers resulting in nighttime hourly noise levels of 40 dBA L_{EQ} at residential properties. Potential feasible attenuation features are described in mitigation measure NOI-2 and were modeled to ensure their effectiveness. As shown in Table 11, *Stationary Equipment Noise Levels with Noise Control*, with implementation of mitigation measure NOI-2, operational noise impacts would be less than significant.

Table 11
STATIONARY EQUIPMENT NOISE LEVELS WITH NOISE CONTROL

Receiver	Intake Pump Station (dBA L_{EQ})	Booster Pump Room with Noise Control (dBA L_{EQ})	Combined Sources (dBA L_{EQ})	Exceeds City of Lake Elsinore Noise Limit?
At 50 feet	63.4	42.2	-	
R1	19.2	27.9	28.4	No
R2	19.2	26.2	27.0	No
R3	18.8	23.6	24.8	No
R4	16.5	14.1	18.5	No
R5	24.1	9.8	24.2	No
R6	27.6	9.8	27.7	No

Source: HELIX 2023e
dBA = A-weighted decibel; L_{EQ} = hourly noise level

Vehicle trips to the Project site would occur daily during operation for the purposes of maintenance and testing. Existing operation of the CLWTP requires two employees to be on-site and with the addition of the treatment systems proposed by the Project, up to six additional employees may need to access the CLWTP on a given day and chemical deliveries would be required occasionally (Kennedy Jenks 2022). Up to 12 one-way trips added to local roadways would not result in substantial increases in traffic noise during Project operation and impacts related to traffic noise would be less than significant.

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

Less Than Significant Impact. As described in item XII.a above, construction of the off-site water pipeline connection would occur approximately 50 feet from the residences west of the Project site, though the majority of Project construction would occur more than 300 feet from nearby residences. Impacts related to vibration were assessed in comparison with Caltrans' severe human response threshold of 0.4 inch per second (in/sec) peak particle velocity (PPV) and building damage threshold for newer



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Source: Aerial (County of Riverside, 2020)

HELIX Environmental Planning

Noise Receiver Locations

Figure 11

residential structures of 0.5 in/sec PPV. The thresholds for continuous/frequent intermittent sources (e.g., vibratory rollers) were considered in this analysis (Caltrans 2020).

Vibration from construction equipment can be estimated using the equation $PPV_{Equipment} = PPV_{REF} (25/D)^n$ where PPV_{REF} is the PPV generated at 25 feet, D is the distance from the equipment to the receiver in feet, and n is 1.1 (Caltrans 2020). A vibratory roller is anticipated to be the piece of construction equipment with the highest vibration potential required for Project construction and has a reference PPV of 0.210 in/sec at 25 feet. At 50 feet, the distance from the nearest residences, the use of a vibratory roller is estimated to generate vibration levels of 0.098 in/sec PPV. This is far below both the severe human response threshold of 0.4 in/sec PPV and the structural damage threshold of 0.5 in/sec PPV. Therefore, the Project would not result in excessive temporary groundborne vibration or noise levels and impacts would be less than significant.

The Project does not propose operational equipment that is anticipated to generate substantial groundborne vibration. Given the distance between operational equipment and nearby residential land uses, perceptible vibration levels are not anticipated to occur at residences surrounding the Project site. Therefore, no impact related to vibration during Project operation would occur.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The Project site is not within the planning area for an adopted airport land use compatibility plan or within two miles of an airport without such a plan. The nearest airport to the Project site is the Perris Valley Airport, located approximately 6.5 miles northeast of the site. The noise contours for the Perris Valley Airport do not include the Project site (Riverside County Airport Land Use Commission 2011). Thus, people working at the Project site would not be exposed to excessive aircraft noise and no impact would occur.

Mitigation

Potential impacts associated with construction noise, construction haul trip noise, and stationary noise sources during Project operation would be reduced to less than significant levels with implementation of mitigation measures NOI-1 and NOI-2.

NOI-1 **Off-Site Construction Noise Control.** For daytime construction of the off-site water pipeline occurring for less than 10 days in a location, construction noise shall not exceed a maximum noise level of 75 dBA L_{MAX}. It is anticipated that when construction activity occurs within 100 feet of residences west of Via De La Valle, noise control shall be provided such that construction noise complies with City of Lake Elsinore standards. A noise barrier shall be placed between noise-generating equipment and residential land uses.

A temporary barrier may be used and shall be solid and constructed of masonry, wood, plastic, fiberglass, steel, or a combination of those materials, with no cracks or gaps through or below the wall. Any seams or cracks must be filled or caulked. If wood is used, it can be tongue and groove or close butted seams and must have a Sound Transmission Class (STC) rating of 23. Sheet metal may be used, if it meets the other criteria and is properly supported and stiffened so that it does not rattle or create noise itself from vibration or wind. Noise blankets, hoods, or covers also may be used, provided they are appropriately implemented to provide the required

sound attenuation. The noise control barrier enclosures may be created as an elongated "U" shape, with the elongated sides parallel to the pipeline and the opening facing away from residential receptors.

NOI-2 Stationary Equipment Noise Control. Noise control features shall be implemented surrounding operational components of the flocculation basin and booster pump station such that hourly noise levels do not exceed 40 dBA L_{EQ} at residential property lines surrounding the Project site. Based on current planning information, the recommendations below are anticipated to facilitate the required reductions in noise levels. Other methods of noise control may be implemented provided they result in hourly noise levels of less than 40 dBA L_{EQ} at residential property lines. The selected noise control components shall be shown on the final construction documents.

The recommended noise control features include the installation of six-inch or thicker acoustic louvers provided on all building ventilation openings or other openings of the booster pump room (not including those typically closed such as doors). The six-inch louvers should provide, at minimum, the noise reduction provided in the table below.

63 Hz	125 Hz	250 Hz	500 Hz	1,000 Hz	2,000 Hz	4,000 Hz	8,000 Hz
6 dB	6 dB	8 dB	10 dB	15 dB	19 dB	19 dB	19 dB

Hz = Hertz; dB = decibel

XIV. Population and Housing

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The Project does not involve the construction of homes or businesses that would directly result in population growth. The Project would construct improvements to the CLWTP identified in the EVMWD's 2017 IRP and 2018 Facilities MP that would support EVMWD's long-term water supply strategy. Specifically, these improvements proposed to increase the CLWTP capacity to 7.0 MGD in the short-term and 9.0 MGD in the moderate- and long-term phases. With implementation of the Phase 1 improvements currently proposed, the optimal capacity of CLWTP would be 7.0 MGD with most components able to accommodate a hydraulic maximum of 9.0 MGD (the ultimate capacity identified

for CLWTP). The increased capacity of the CLWTP proposed by the EVMWD MP is not anticipated to induce population growth into the EVMWD service area. Rather, the long-term supply strategy of the EVMWD is intended to provide water under multiple drought conditions to existing and planned populations within its service area. The Project also would not generate substantial job opportunities that would result in an increase in population in the region, as it would require six new full-time employees during operation. The Project is not anticipated to induce substantial unplanned population growth, either directly or indirectly, and no impact would occur.

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

No Impact. The Project site does not contain any residences and would continue to be used as a water treatment facility. The Project would not require the displacement of any people or housing and no impact would occur.

XV. Public Services

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	☐	☐	☐	☒
b) Police protection?	☐	☐	☐	☒
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☐	☒

a) Fire protection?

No Impact. The Project would occur where existing infrastructure is served by the Canyon Lake Fire Department. While the Project would result in changes to this facility, it would not induce population growth or create structures that would require additional fire protection services compared to the existing facility. Project components would comply with applicable California Fire Code requirements. No new or altered fire protection facilities would be required due to Project implementation and no impact would occur.

b) Police protection?

No Impact. The Project would not result in population growth or the construction of a new land use that would require police protection. The Project would be located within the existing CLWTP property, which is secured by a gate. No new police protection services would be required and no impact would occur.

c) Schools?

No Impact. The Project would not induce population growth, including that of school-aged children. Therefore, no new or altered school facilities would be required and no impact would occur.

d) Parks?

No Impact. The Project would not result in population growth and thereby would not result in an increased need for park facilities or the need for upgrades to existing park facilities. No impact would occur.

e) Other public facilities?

No Impact. No population growth would occur as a result of the Project. Therefore, no increased use of public facilities or need for new public facilities would occur and there would be no impact.

XVI. Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The Project would not result in population growth and would not increase the use of parks or recreational facilities. Thus, substantial physical deterioration of these facilities would not occur or be accelerated and no impact would occur.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The Project would improve the existing CLWTP and does not propose any recreational facilities. Additionally, the Project would not induce population growth that would require the construction or expansion of park or recreational facilities in the region. No impact would occur.

XVII. Transportation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less Than Significant Impact. During construction, the Project would temporarily alter existing circulation patterns and would require a permit from the City of Lake Elsinore to perform work in Via De La Valle. The construction contractor would be required to develop and implement a Project-specific traffic control plan that would outline procedures and traffic control measures necessary to ensure adequate access would be maintained during the altered traffic conditions associated with the off-site pipeline installation. Potential provisions of the traffic control plan may include the use of flaggers to guide vehicles, installing protective barriers around work zones, minimizing the hours of construction activity in the ROW, providing notification of road closures to emergency personnel, and other measures deemed necessary by the City of Lake Elsinore. Existing circulation elements, including Via De La Valle and the CLWTP access road, would be returned to pre-Project conditions upon the completion of construction activities in compliance with circulation programs, plans and policies. Impacts would be less than significant.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less Than Significant Impact. According to CEQA Guidelines Section 15064.3 subdivision (b), vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. The Office of Planning and Research technical advisory regarding transportation impacts indicates that small projects generating fewer than 110 trips per day can be assumed to cause a less than significant

transportation impact (Office of Planning and Research 2018). Employees would commute to the CLWTP daily and chemical deliveries would be required less than once per week. The existing CLWTP classification requires one chief operator and one shift operator and would require the same staffing once operational. With the addition of the PFAS and T&O treatment systems proposed by the Project, up to six additional employees may be required to access the site on a given day for sampling and other maintenance activities (Kennedy Jenks 2022). In combination with chemical deliveries, it is anticipated that up to 12 new one-way daily trips could occur to the CLWTP. As the Project would not exceed the 110-trip threshold, it can be assumed that no conflicts with CEQA Guidelines Section 15064.3 subdivision (b) would occur and impacts would be less than significant.

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

Less Than Significant Impact. During construction of the off-site water pipeline connection, the Project would require altered traffic patterns. Adherence to the conditions of the Project's traffic control plan would ensure that altered circulation would not result in substantial hazards within the circulation system. After construction, Project components would be contained within the secured CLWTP facility or underground and would not increase hazards or result in incompatible uses. Impacts would be less than significant.

d) Result in inadequate emergency access?

Less Than Significant Impact. During construction of the water pipeline connection occurring in the public ROW, measures included in the traffic control plan would be implemented to ensure that emergency access to surrounding properties would remain adequate. Access to the Project site via Longhorn Drive and the Happy Camp Campground would also be provided throughout construction of the Project since the primary entrance would be inhibited by pipeline construction. After construction activities in the ROW are complete, public roadways and the CLWTP would be returned to pre-Project conditions, which would accommodate emergency vehicle access through the primary entrance from Via De La Valle, as is the case under existing conditions. Impacts would be less than significant.

XVIII. Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
i.	Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☒	☐	☐
ii.	A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

The discussion below is based in part on the Cultural Resources Survey prepared by HELIX (2023d), attached to this Initial Study as Appendix D.

a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

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

   ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less Than Significant with Mitigation Incorporated (a.i and a.ii). The NAHC was contacted on January 6, 2023, for a Sacred Lands File search. The response, received on January 19, 2023, was positive. HELIX sent letters on March 2, 2023, to the tribal contacts provided by the NAHC. To date, four responses have been received: The Agua Caliente Band of Cahuilla Indians, the Quechan Tribe of the Fort Yuma Reservation, and Rincon indicated that they have no comments on the Project and defer to local tribes, while the Augustine Band of Cahuilla Indians was unaware of specific cultural resources that may be affected by the Project.

The cultural resources field survey was conducted with tribal cultural monitors from the Soboba Band of Luiseño Indians and the Pechanga Band of Luiseño Indians in March 2023 and did not identify any archaeological resources within the Project area. On March 20, 2023, letters inviting tribes to consult under AB 52 were sent to the Soboba Band of Luiseño Indians, Pechanga, Rincon, and Agua Caliente Band of Cahuilla Indians. The Agua Caliente Band of Cahuilla Indians responded deferring to more local

tribes. Soboba, Pechanga, and Rincon responded to these letters requesting consultation with EVMWD and have reviewed the cultural survey prepared for the Project and the proposed mitigation measures (CUL-1 through CUL-9) for impacts to tribal cultural resources. Consultation with Soboba, Pechanga, and Rincon under AB 52 concluded in April 2023. The SWRCB will undertake Section 106 consultation with interested Tribes.

As the Project area is sensitive for cultural resources and the Sacred Lands File search was positive, the Project is considered to have potentially significant impacts related to tribal cultural resources. An archaeological and Native American monitoring program was recommended in the cultural resources survey and would be implemented in accordance with mitigation measures CUL-1 through CUL-9. These mitigation measures require attendance by the archaeologist and Native American monitor(s) at a preconstruction meeting and during initial ground-disturbing activities, during which time the 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 tribal cultural material is encountered, the Project archaeologist would coordinate with representatives of the Monitoring Tribes and with EVMWD and SWRCB staff to develop and implement appropriate avoidance, mitigation, or treatment measures. Consultation in accordance with Section 106, along with implementation of mitigation measures CUL-1 through CUL-9, would reduce potential impacts to tribal cultural resources to a less than significant level.

XIX. Utilities and Service Systems

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

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact. No new or expanded wastewater, storm water, electric power, natural gas, or telecommunications utilities would be required for operation of the proposed Project. The minimal water supplies needed during Project construction would be provided by existing infrastructure and the addition of a potable water connection in Via De La Valle would provide water to the Project site from an existing 8-inch water line. No new or expanded potable water infrastructure would be required outside of this connection to the existing line, the environmental effects of which are described throughout this Initial Study. Impacts would be less than significant.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Less Than Significant Impact. The Project does not involve activities that would require permanent water supplies. Water supplies required during the construction of the Project would be limited to water utilized for dust suppression on the Project site. Sufficient water supplies from the EVMWD are available to provide these limited water supplies to the Project during construction. The Project would increase the capacity of the CLWTP to process water supplies for EVMWD but would not require substantial water supplies outside of those being processed during its operation. As such, a less than significant impact would occur.

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

Less Than Significant Impact. As was the case with the existing CLWTP, all waste streams are planned to be discharged to the decant pond and ultimately the sewer. Historically, approximately 25 percent of the CLWTP's five MGD water flow has been lost to the sewer. The wastewater system is operated by EVMWD and has sufficient capacity to continue accommodating wastewater from the CLWTP, which would have an increased maximum capacity with implementation of the Project. The wastewater treatment provider (EVMWD) has sufficient capacity to serve the Project in addition to existing commitments and impacts would be less than significant.

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

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

Less Than Significant Impact (d and e). Solid waste generated during Project construction may include demolition debris, vegetation material, used fuel containers, and other materials, all of which would be disposed of in accordance with applicable solid waste regulations. Construction waste would be managed in accordance with the construction contractor's Solid Waste Management Plan, which would require documentation and diversion of waste generated during construction.

The Project is not anticipated to generate substantial quantities of solid waste during operation. Small quantities of solid waste generated during maintenance and testing operations would not exceed the

capacity of local infrastructure and would be disposed of in accordance with applicable regulations. No conflicts with solid waste goals or regulations would occur and impacts would be less than significant.

XX. Wildfire

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

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. See item IX.f. Construction and operation of the CLWTP within the existing site boundaries would not impair emergency response or evacuation plans. During construction activities proposed in the ROW, the construction contractor would be required to implement a traffic control plan and maintain emergency evacuation routes. Adherence to this plan would ensure the Project would not interfere with emergency response or evacuation during construction in public ROWs. Impacts would be less than significant.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less Than Significant Impact. A small area at the southern side of the Project site is recommended by CAL FIRE as a VHFHSZ for the City (CAL FIRE 2009). During construction, the Project would implement the brush management practices described in Section 2.9.2 to prevent the exacerbation of wildfire risks due to construction equipment usage. The Project does not propose operational components or substantially altered slopes that would exacerbate the risk of wildfire spread. In addition, the Project

would not introduce residents to the Project site who could be exposed to wildfire pollutants. The Project would not exacerbate wildfire risks and impacts would be less than significant.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Less Than Significant Impact. The Project proposes the installation of water treatment infrastructure and an off-site water line connection. Project components would comply with applicable fire codes and would not exacerbate fire risks. No fuel breaks, emergency water sources, or power lines are proposed as part of the Project. Temporary and ongoing impacts to the environment related to other issue areas are analyzed throughout this Initial Study. Impacts would be less than significant.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less Than Significant Impact. The Project site would be stabilized after grading activities to prevent substantial runoff and slope instability leading to significant risks such as flooding or landslides. The drainage pattern on the Project site would be similar to existing conditions and would not generate significant risks to structures on the Project site. No habitable structures that could be exposed to wildfire risks are proposed by the Project. Impacts would be less than significant.

XXI. Mandatory Findings of Significance

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

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

Less Than Significant with Mitigation Incorporated. The Project has the potential to result in impacts to coastal California gnatcatcher and its habitat; nesting birds and raptors protected by the MBTA; and herbaceous wetland habitat, including jurisdictional areas. Implementation of mitigation measures BIO-1 through BIO-4 would reduce these impacts to a less than significant level. The Project also has the potential to impact significant cultural and tribal cultural resources. Implementation of mitigation measures CUL-1 through CUL-9 would ensure these impacts are reduced to a less than significant level. Therefore, the Project would not substantially degrade the environment, decrease the number or habitat of special status plant or animal species, or eliminate major periods of California history. Impacts would be less than significant with mitigation incorporated.

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

Less Than Significant with Mitigation Incorporated. CEQA Guidelines Section 15130 requires a discussion of the cumulative impacts of a project when the project's incremental effect is "cumulatively considerable," meaning that the project's incremental effects are considerable when viewed in connection with the effects of past, current, and probable future projects.

The Avenues Septic to Sewer Project (EVMWD 2023a) and Sedco Hills Septic to Sewer Project (EVMWD 2023b) were identified for inclusion in the cumulative analysis of the proposed Project, as EVMWD has proposed these two projects to be constructed within a similar timeframe as the proposed Project. These two projects propose the installation of sewer infrastructure to serve existing residential customers of EVMWD who utilize septic systems. The Avenues project is proposed approximately 2 miles west of the CLWTP and the Sedco Hills project is proposed approximately 1.7 miles southwest of the CLWTP. The estimated construction schedules for these projects are currently planned to begin in August 2023 and occur for up to 24 months, thereby overlapping (at least partially) with construction of the proposed Project.

As is the case with the proposed Project, the proposed sewer infrastructure is intended to serve existing and planned development and no growth-inducing components are proposed. In addition, the two sewer projects would consist of passive infrastructure components contributing sewer flows to the existing Regional Water Reclamation Facility and would not result in ongoing environmental impacts during operation. Therefore, no cumulative impacts related to operation of the Project in combination with the other identified projects would occur.

Based on the distance between the project areas, construction noise from the Project and sewer projects would be too far apart to contribute to cumulative noise impacts to any singular location. Similarly, the addition of vehicle trips associated with the construction workers required to construct these three projects would not contribute to significant, cumulative transportation impacts as they would travel along different roadways and would not generate a significant number of vehicle trips.

As discussed in Section 4.III, the Project's construction emissions of criteria pollutants would not exceed the SCAQMD daily screening thresholds or LSTs. Due to the distance between the Project and sewer projects, no localized air quality violations for sensitive receptors would occur. The Project was determined to have a less than significant impact in relation to GHG emissions, which are inherently discussed in terms of cumulative impacts. As passive infrastructure components, the sewer projects would not result in operational GHG emissions, and no cumulatively considerable impact would occur in combination with the Project.

With implementation of mitigation measures BIO-1 through BIO-4, no net loss of habitat or special status species would occur and impacts to biological resources would be less than significant at the Project level and in combination with cumulative projects. The Project would implement mitigation measures CUL-1 through CUL-9 and would not contribute to the cumulative loss of cultural or tribal cultural resources.

All resource topics for the Project and identified projects have been analyzed in accordance with the CEQA Guidelines and found to pose no impact, a less than significant impact, or a less than significant impact with mitigation. Potential cumulative projects that could be constructed in the vicinity of the Project would also be required to comply with existing applicable federal, state, and local regulations.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant with Mitigation Incorporated. The Project would not consist of any construction activities or operational components that would negatively affect any persons in the vicinity. In addition, all resource topics have been analyzed in accordance with the State CEQA Guidelines or associated thresholds and found to pose no impact, a less than significant impact, or a less than significant impact with mitigation incorporated. As discussed in Section 4.III, no violations of air quality thresholds would occur and no significant impacts to sensitive receptors related to pollutants would occur. As discussed in Section 4.IX of this Initial Study, there are no concerns from past activities at the Project site and hazardous materials and/or wastes necessary for water treatment would be stored and handled in accordance with applicable regulations. With implementation of mitigation measures NOI-1 and NOI-2, the Project would not generate excessive noise that would conflict with local noise ordinances and cause disturbances to local residents. Off-site construction would comply with a traffic control plan to ensure emergency access and evacuation routes are maintained. As discussed in Section 4.XX, the Project would implement brush management practices during construction and would not increase the risk of wildfires. Consequently, with implementation of the applicable BMPs and mitigation measures, the Project would not result in any environmental effects that would cause substantial adverse effects on human beings directly or indirectly.

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Appendix A

Air Quality, Greenhouse Gas Emissions, and Energy Technical Report

Canyon Lake Water Treatment Plant Phase I Improvements Project

Air Quality, Greenhouse Gas Emissions, and Energy Technical Report

September 2023 | 00407.00046.001

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
APS	Alternative planning strategy
AQMP	Air Quality Management Plan
Btu	British thermal unit
C_2F_6	hexafluoroethane
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CF_4	tetraflouromethane
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
CH_4	methane
City	City of Canyon Lake
CLWTP	Canyon Lake Water Treatment Plant
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPUC	California Public Utilities Commissions
CY	cubic yard
DPM	diesel particulate matter
DWSRF	Drinking Water State Revolving Fund
EIA	U.S. Energy Information Administration
EIR	Environmental Impact Report
EO	Executive Order
EVMWD	Elsinore Valley Municipal Water District
GHG	greenhouse gas
GWh	gigawatt-hour
GWP	global warming potential
HFC	hydrofluorocarbon
HR6	House of Representatives Bill 6

ACRONYMS AND ABBREVIATIONS (cont.)

I-	Interstate
IPCC	Intergovernmental Panel on Climate Change
kWh	kilowatt-hours
LCFS	Low Carbon Fuel Standard
LST	localized significance threshold
LTPP	Long Term Procurement Plan
mg/m^3	milligrams per cubic meter
MMBTU	million British thermal units
MMT	million metric tons
mph	miles per hour
MPO	metropolitan planning organization
MT	metric tons
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
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
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
SF_6	hexafluoride
SIP	State Implementation Plan
SLCP	short-lived climate pollutant

ACRONYMS AND ABBREVIATIONS (cont.)

SO_2	sulfur dioxide
SO_X	sulfur oxides
SRA	source receptor area
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound
WRI	World Resource Institute
WRCOG	Western Riverside Council of Governments

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EXECUTIVE SUMMARY

The Canyon Lake Water Treatment Plant Phase 1 Improvements Project (Project) is proposed by the Elsinore Valley Municipal Water District to address current capacity issues at the Canyon Lake Water Treatment Plant and improve water quality in Canyon Lake. The Project would involve demolition of the existing intake pump station, static mixers, clarifier, and chemical feed area and construction of a new intake pump station, static mixers, sedimentation/flocculation basins, treatment systems, pump stations, and ancillary buildings. This report presents an assessment of potential air quality, greenhouse gas (GHG) emission, and energy consumption impacts during construction and operation of the Project.

The Project would not generate population and employment growth beyond the levels assumed for the region. Pursuant to South Coast Air Quality Management District (SCAQMD) guidelines, the proposed Project is considered consistent with the region's Air Quality Management Plan.

The Project would result in emissions of criteria air pollutants during construction only. In accordance with SCAQMD Rule 403, fugitive dust control measures would be required. Project emissions of criteria pollutants and precursors would not exceed the SCAQMD emissions thresholds. Impacts related to cumulatively considerable net increases of criteria pollutants in the region would be less than significant.

Construction and operation of the Project would not result in exposure of sensitive receptors to significant quantities of toxic air contaminants or substantial localized criteria pollutant and precursor concentrations, as analyzed following SCAQMD's Localized Significance Thresholds Methodology. Impacts related to exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

The Project would not generate other emissions (such as those leading to odors) that would affect a substantial number of people.

GHG emissions resulting from construction and operation of the Project would not exceed the SCAQMD's screening threshold for industrial facilities. The Project would not conflict with any applicable GHG emission reduction plans. Impacts related to GHG emissions and conflicts with GHG emission reduction plans and policies would be less than significant.

The Project would avoid or reduce inefficient, wasteful, or unnecessary consumption of energy. The Project is anticipated to have an energy use demand of 4,627 million British thermal units over the full duration of construction and 3,482 megawatt-hours (MWh) of electricity per year once operational. The Project's demand on energy resources and services would not be anticipated to require the construction of new energy facilities or require improvements to local infrastructure. Therefore, impacts related to inconsistency with adopted plans and policies and energy waste would be less than significant.

Project emissions would be less than the general conformity *de minimis* levels. Impacts related to conformity to the Federal Clean Air Act would be less than significant.

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1.0 INTRODUCTION

HELIX Environmental Planning, Inc. has conducted this report to provide an analysis of potential impacts related to air quality, greenhouse gas (GHG) emissions, and energy consumption during construction and operation of the Canyon Lake Water Treatment Plant (CLWTP) Phase 1 Improvements Project (Project). This report details the methods and results of the analyses and has been prepared to comply with the California Environmental Quality Act (CEQA), the federal Clean Air Act (CAA) General Conformity Rule, and South Coast Air Quality Management District (SCAQMD) guidelines.

1.1 PROJECT LOCATION

The CLWTP is located east of Interstate (I-) 15 and west of I-215 in Riverside County, California. It is located within the City of Canyon Lake (City) and borders the City of Lake Elsinore on the southern end of Canyon Lake. The site can be accessed via Longhorn Drive or Via De La Valle, which connect to Old Newport Road and the access roads through the CLWTP. The overall CLWTP site is approximately 12.6 acres, or 548,300 square feet. The site zoning is CF – Community Facility. Refer to Figure 1, *Regional Location,* and Figure 2, *Aerial Photograph*.

1.2 PROJECT DESCRIPTION

The Elsinore Valley Municipal Water District (EVMWD) is proposing to implement new treatment facilities at the CLWTP. The Project is intended to address current capacity issues and improve water treatment systems for the water pumped from Canyon Lake to EVMWD customers.

The proposed Project would demolish the existing intake pump station, static mixers, clarifier, and chemical feed area shown in Figure 3, *Existing Facilities*. The Project would construct a new intake pump station at the lake; new static mixers and sedimentation/flocculation basins; new equipment for per- and polyfluoroalkyl substances, taste, and odor treatment; new booster and backwash pump stations; and chemical and maintenance buildings. The proposed improvements, as well as construction staging areas, would be located within the boundary of the existing CLWTP. See Figure 4, *Proposed Improvements.*

1.3 CONSTRUCTION ACTIVITIES AND PHASING

Construction of the Project would begin in February 2024 to remove some existing facilities, equipment, and materials including the existing floating intake/pump station, clarifier and chemical storage and handling facility. Clearing and grading of the site would follow and include the export of approximately 19,000 cubic yards (CY) of material. Following demolition and site preparation, construction of the new facilities would begin in late May 2024 and continue through early 2026.

Project construction would be required to implement all applicable fugitive dust best available control measures specified in Table 1 of the SCAQMD Rule 403, Fugitive Dust (SCAQMD 2005), including, but not limited to: the use of an on-site water truck to wet down exposed areas at least twice daily, maintaining a 12 percent moisture content to unpaved roads, and limiting vehicle speeds to 15 miles per hour (mph).

2.0 REGULATORY SETTING

2.1 AIR QUALITY

The Project site is located within 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 SCAQMD at the regional level.

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:

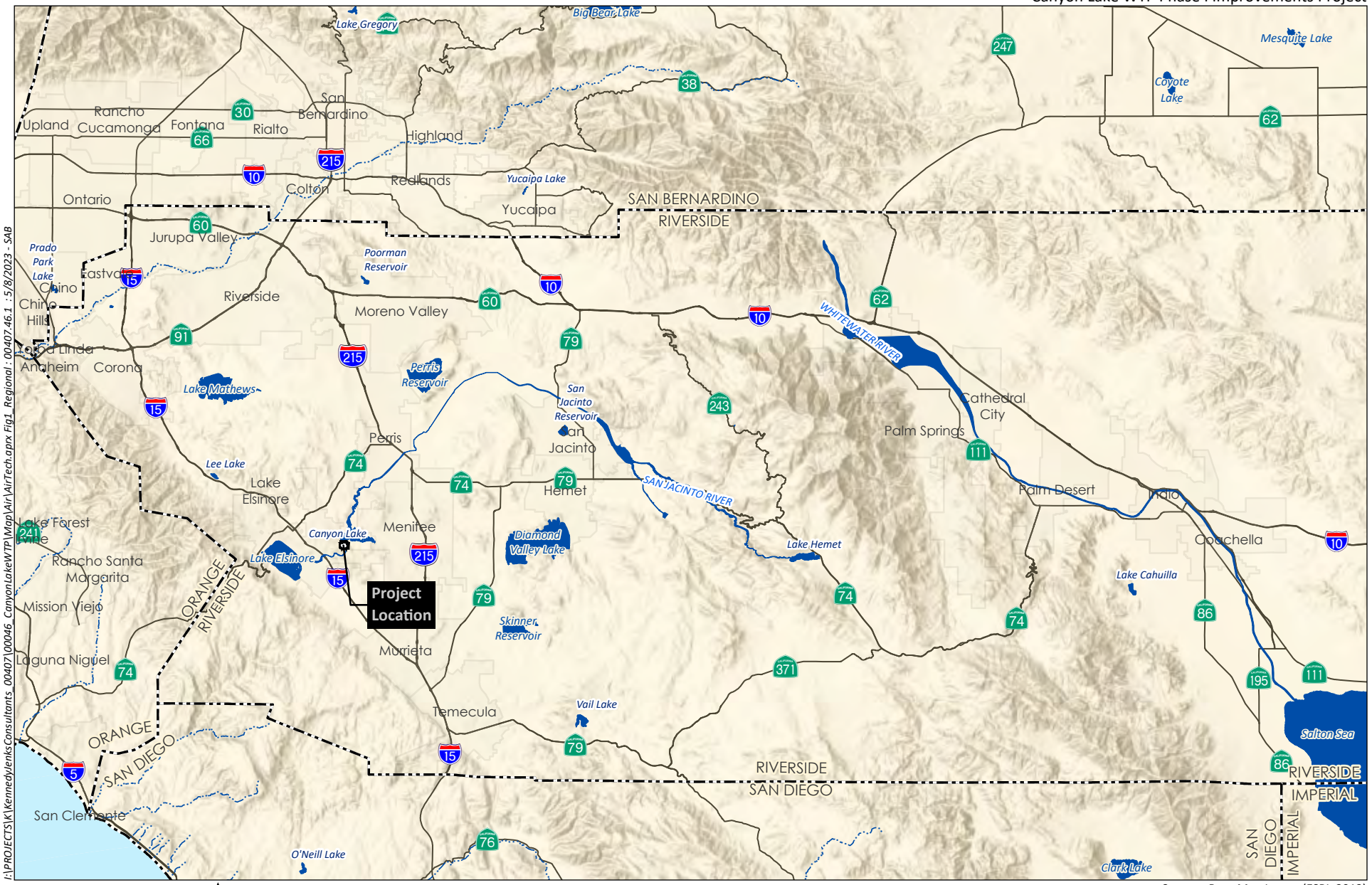
- Ozone (O_3)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Particulate matter (PM), which is further subdivided:
  - Coarse PM, 10 microns or less in diameter (PM_{10})
  - Fine PM, 2.5 microns or less in diameter ($PM_{2.5}$)
- Sulfur dioxide (SO_2)
- Lead (Pb)

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 1, *Common Sources and Human Health Effects of Criteria Air Pollutants*, based on information provided CARB and USEPA (CARB 2023a; USEPA 2023). 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

[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.



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Source: Base Map Layers (ESRI, 2013)

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Regional Location

Figure 1



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0 600 Feet

Source: Aerial (Maxar, 2022)

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Aerial Photograph

Figure 2



0 150 Feet

Source: Aerial (County of Riverside, 2020)

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Existing Facility

Figure 3



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Source: Aerial (County of Riverside, 2020)

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Proposed Improvements

Figure 4

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.

Table 1
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, nonflammable 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 2023a; USEPA 2023

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 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 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 2.5 microns or less in diameter (CARB 2023b). 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 2023b).

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 health and welfare of the general 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 the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several criteria pollutants. Table 2, *Ambient Air Quality Standards*, shows the federal and state ambient air quality standards for these pollutants.

Table 2
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards Primary[1]	Federal Standards Secondary[2]
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	12.0 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)	–	–

Pollutant	Averaging Time	California Standards	Federal Standards Primary[1]	Federal Standards Secondary[2]
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

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

2 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 10 microns or less in diameter; AAM = Annual Arithmetic Mean; $PM_{2.5}$ = fine particulate matter 2.5 microns or less in diameter; 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," "maintenance," or "unclassified" for each criteria air pollutant, based on whether or not the NAAQS have been achieved. Upon attainment of a standard for which an area was previously designated nonattainment, the area will be classified as a maintenance area. 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 Riverside County portion of the SCAB and, as such, is in an area designated as a nonattainment area for certain pollutants that are regulated under the CAA. Table 3, *South Coast Air Basin Attainment Status*, lists the federal and state attainment status of the SCAB for the criteria pollutants. With respect to federal air quality standards, the USEPA classifies the SCAB as in attainment for PM_{10}, CO, NO_2, SO_2, and lead, and in nonattainment for 8-hour ozone and $PM_{2.5}$.

Table 3
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
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

Criteria Pollutant	Federal Designation	State Designation
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Attainment
Visibility	(No federal standard)	Attainment

Source: SCAQMD 2016a

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 that 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 actually threaten public health. Table 3, above, 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 of the items that are included in the California SIP (CARB 2023c). 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 (AQMP).

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 3.

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 2005).

Rule 1113 – Architectural Coating: Establishes VOC limits for architectural coatings (e.g., paints, stains, preservatives). Effective January 1, 2019, building interior and exterior paint is limited to a maximum VOC content of 50 grams per liter (SCAQMD 2016b).

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 2016 global surface temperatures ranking as the warmest year on record since 1880. The newest release in long-term warming trends announced the last nine consecutive years (2014-2022) have been the warmest nine years on record. During 2022, an increase of 1.6 degrees Fahrenheit compared to the 1951-1980 average ranked as the fifth warmest year since 1880 (National Aeronautics and Space Administration 2023). GHG and aerosol emissions from human activities are the most significant driver of observed climate change since 1750 (United Nations Intergovernmental Panel on Climate Change [IPCC] 2021). The IPCC Fifth Assessment Report constructed several emission trajectories of GHG emissions needed to stabilize global temperatures and climate change impacts. The statistical models showed 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 were stabilized at about 450 parts per million (ppm) carbon dioxide equivalent (CO_2e) by the year 2100 (IPCC 2014). As of the Sixth Assessment Report published in 2022, the IPCC determined warming would "likely" exceed 1.5 degrees Celsius and would become difficult to limit to 2 degrees Celsius if it is not already limited by 2030 (IPCC 2022).

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 (approximately 280 ppm in 1750). As of January 2023, the CO_2 concentration exceeded 419 ppm (National Oceanic and Atmospheric Administration 2023).

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 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.

Fluorocarbons. Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. Chlorofluorocarbons (CFCs) are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the 1989 Montreal Protocol.

Sulfur Hexafluoride. SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable 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 global warming potential (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.

The atmospheric lifetime and GWP of selected GHGs are summarized in Table 4, *Global Warming Potentials and Atmospheric Lifetimes*. As indicated below, GWPs range from 1 to 22,800. Although the IPCC has released their Fifth and Sixth Assessment Reports with updated GWPs, CARB reports the Statewide GHG inventory using the Fourth Assessment Report GWPs, which is consistent with international reporting standards. By applying the Fourth Assessment Report GWP ratios, Project-related equivalent mass of CO_2, denoted as CO_2e emissions can be tabulated in metric tons (MT) per year.

Table 4
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-134a	14	1,430

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
PFC: Tetrafluoromethane (CF_4)	50,000	7,390
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC 2007
IPCC = Intergovernmental Panel on Climate Change; GWP = global warming potential; HFC = hydrofluorocarbon; PFC = perfluorocarbon

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 2022). 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 to 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 standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025.

2.2.4 California Greenhouse Gas Regulations

2.2.4.1 Executive Order S-3-05

On June 1, 2005, Executive Order (EO) S-3-05 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.

2.2.4.2 Assembly Bill 32 – Global Warming Solution Act of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that CARB 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.

2.2.4.3 Executive Order B-30-15

On April 29, 2015, EO B-30-15 established 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 is on track to meet or exceed the target of reducing GHGs 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.

2.2.4.4 Senate Bill 32

Senate Bill (SB) 32, Amendments to the California Global Warming Solutions Action of 2006, extends California's GHG emission 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 emission 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.

2.2.4.5 Assembly Bill 197

A condition of approval for SB 32 was the passage of AB 197. AB 197 requires that CARB 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 a legislative committee to make recommendations about CARB programs to the legislature.

2.2.4.6 Executive Order S-01-07

This EO, signed 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 a 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 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.

2.2.4.8 Senate Bill 375

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.

Under the Sustainable Communities Act, CARB sets 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 MPO's determination that the SCS, if implemented, would meet the regional GHG emission 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 Alternative Planning Strategy categorized as "transit priority projects" would receive incentives to streamline CEQA processing.

2.2.4.9 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 sale 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.

2.2.4.10 Executive Order N-79-20

EO N-79-20, signed by Governor Newsom on September 23, 2020, establishes three goals for 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.

2.2.4.11 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 almost complete transition away from fossil fuels.

2.2.4.12 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.

2.2.4.13 California Air Resources Board: Scoping Plan

The Scoping Plan is a strategy CARB develops and updates at least one every five years, as required by AB 32. It lays out the transformations needed across California 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 the 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). 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 Regional GHG Emission Policies and Plans

Under Section 53091(d) and (e) of the California Government Code, building ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment or transmission of water or wastewater. Zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water. Consequently, zoning ordinances only apply to wastewater projects. The following discussion of regional policies is provided for informational purposes and regional context.

2.2.5.1 Western Riverside Council of Governments Climate Action Plan

The twelve cities of the Western Riverside Council of Governments (WRCOG), which includes the City of Canyon Lake, adopted a Subregional Climate Action Plan (CAP) in September 2014. The WRCOG CAP provides a 2010 baseline inventory of GHG emissions for the subregion cities of 5,834,400 MT of CO_2e. The WRCOG CAP established a target of reducing subregional GHG emissions 15 percent below 2010 levels by 2020 and 49 percent below 2010 levels by 2035. To achieve the 2020 reduction target, the WRCOG CAP identifies 14 State and regional measures, 3 local energy sector measures, 18 local transportation sector measures, and 2 solid waste sector measures. The WRCOG CAP does not identify GHG reduction measures for achieving goals beyond 2020, when the Project would be implemented (WRCOG 2014).

2.3 ENERGY

Energy consumption is a significant source of GHG emissions. Regulations to address energy also address GHGs, resulting in some overlap in the discussions in the following text and Section 2.2, above. In addition to the federal, state, and local regulations directed at reducing GHG emissions through increased efficiencies presented in Section 2.2 (i.e., EO S-3-05; EO B-30-15; EO S-01-07; AB 32; SB 100; SB 350; SB 1368; the CARB Scoping Plan), energy efficiency regulations that have the potential to influence the Project are discussed below.

2.3.1 Federal Regulations

2.3.1.1 Energy Independence and Security Act of 2007

House of Representatives Bill 6 (HR 6), the federal Energy Independence and Security Act of 2007, established new standards for a few equipment types not already subjected to a standard, and updated some existing standards. Perhaps the most substantial new standard that HR 6 established is for general service lighting that is being deployed in two phases. First, phased in between 2012 through 2014, common light bulbs were required to use about 20 to 30 percent less energy than previous incandescent bulbs. Second, by 2020, light bulbs were required to consume 60 percent less energy than previous incandescent bulbs; this requirement will effectively phase out the incandescent light bulb.

2.3.1.2 Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. The most recent fuel economy standards for passenger cars and light trucks were issued on March 31, 2022 for model years 2024 through 2026. Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

2.3.2 State Regulations

2.3.2.1 California Energy Plan

The California Energy Commission (CEC) is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety,

and the maintenance of a healthy economy. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the fewest environmental and energy costs. To further this policy, the plan identifies a number of strategies, including providing assistance to public agencies and fleet operators.

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 worst-case conditions for the formation of photochemical smog. The basin-wide occurrence of inversions at 3,500 feet above mean sea level or less averages 191 days per year (SCAQMD 1993).

The predominant wind direction in the vicinity of the Project is from the southwest and the average wind speed is approximately four miles per hour (Iowa Environmental Mesonet 2023). The annual average maximum temperature in the Project area is approximately 81°F, and the annual average minimum temperature is approximately 47°F. Total precipitation in the Project area averages approximately 12 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center 2016).

3.2 SENSITIVE RECEPTORS

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: adults over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015). Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptor locations. Examples of these sensitive receptor locations are residences, schools, hospitals, and daycare centers. For health risk assessments, the health impacts are analyzed for individual residents assumed to be standing in their

primary outdoor spaces closest to the source of TACs, for students assumed to be standing outside of the school buildings or in outdoor recreation areas closest to the source of TACs, and for individual off-site workers assumed to be standing outside of a commercial or industrial building.

The closest existing sensitive receptor location to the Project site is a single-family development located to the west across Via de la Valle approximately 50 feet from the limits of disturbance. Additional single-family homes are located to the south and southwest approximately 290 feet from the limits of disturbance. The closest school to the Project site is the Tuscany Hills Elementary School, approximately 6,000 feet (1.1 mile) northwest of the Project site.

3.3 EXISTING AIR QUALITY

3.3.1 Criteria Pollutants

3.3.1.1 Attainment Designations

Attainment designations are discussed in Section 2.1 and Table 3. The SCAB is a federal and state nonattainment area for 8-hour ozone and $PM_{2.5}$. The SCAB is also a state nonattainment area for 1-hour ozone and PM_{10}.

3.3.1.2 Monitored Air Quality

The SCAQMD maintains monitoring stations to measure ambient concentrations of pollutants in the SCAB. The nearest monitoring station, approximately three miles west of the Project site, is the Lake Elsinore monitoring station. Table 5, *Air Quality Monitoring Data*, presents a summary of the ambient pollutant concentrations monitored at the two air quality monitoring stations during the most recent three years (2019 through 2021) for which the SCAQMD has reported data. The station measured acceptable levels of NO_2 in all years and of PM_{10} for 2019 and 2021. The state and federal ozone standards were violated multiple times each year and the PM_{10} federal standard was violated once in 2020. Insufficient data were available to report the number of exceedances of state PM_{10} standards and federal $PM_{2.5}$ standards.

Table 5
AIR QUALITY MONITORING DATA

Pollutant	2019	2020	2021
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.108	0.130	0.118
Days above 1-hour state standard (>0.09 ppm)	4	18	18
Maximum 8-hour concentration (ppm)	0.089	0.100	0.097
Days above 8-hour state standard (>0.070 ppm)	28	54	44
Days above 8-hour federal standard (>0.070 ppm)	28	54	44
Respirable Particulate Matter (PM_{10})			
Maximum 24-hour concentration (µg/m^3)	93.8	192.4	90.0
Days above state standard (>50 µg/m^3)	*	*	*
Days above federal standard (>150 µg/m^3)	0	1	0

Pollutant	2019	2020	2021
Fine Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration (µg/m^3)	17.6	41.6	28.8
Days above federal standard (>35 µg/m^3)	*	*	*
Annual average(µg/m^3)	*	7.2	6.9
Exceed state and federal annual standard (12 µg/m^3)	*	No	No
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.038	0.043	0.043
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)	0.006	0.007	0.007
Exceed annual federal standard (0.053 ppm)	No	No	No
Exceed annual state standard (0.030 ppm)	No	No	No

Source: CARB 2023d
*Indicates insufficient data available
ppm = parts per million, µg/m^3 = micrograms per cubic meter

3.3.2 Greenhouse Gases

In an effort to evaluate and reduce the potential adverse impact of global climate change, international, state, and local organizations have conducted GHG inventories to estimate their levels of GHG emissions and removals. The following summarizes the results of these global, national, state, countywide, and local GHG inventories.

In 2019, total GHG emissions worldwide were estimated at 49,758 million metric tons (MMT) of CO_2e emissions (World Resource Institute [WRI] 2023). The U.S. contributed the second largest portion (11.6 percent) of global GHG emissions in 2019. The total for U.S. GHG emissions was 5,771 MMT CO_2e in 2019. On a national level, approximately 31 percent of U.S. GHG emissions were associated with transportation and about 34 percent were associated with electricity generation (WRI 2023).

CARB performs statewide GHG inventories. The inventory is divided into six broad sectors; agriculture and forestry, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in MMT CO_2e. Table 6, *California Greenhouse Gas Emissions by Sector*, shows the estimated statewide GHG emissions for the years 1990, 2000, 2010, and 2020.

Table 6
CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	Emissions (MMT CO_2e)			
	1990	2000	2010	2020
Agriculture and Forestry	18.9 (4%)	30.8 (7%)	33.6 (8%)	31.6 (9%)
Commercial	14.4 (3%)	14.6 (3%)	20.1 (5%)	22.0 (6%)
Electricity Generation	110.5 (26%)	105.2 (23%)	90.6 (20%)	59.8 (16%)
Industrial	105.3 (24%)	101.2 (22%)	97.9 (22%)	85.3 (23%)
Residential	29.7 (7%)	31.5 (7%)	32.1 (7%)	30.7 (8%)
Transportation	150.6 (35%)	178.5 (39%)	168.0 (38%)	139.9 (38%)
Unspecified Remaining	1.3 (<1%)	0.0 (0%)	0.0 (0%)	0.0 (0%)
TOTAL	430.7	461.9	442.3	369.2

Source: CARB 2007 and CARB 2022b
MMT = million metric tons; CO_2e = carbon dioxide equivalent

As shown in Table 6, statewide GHG emissions totaled approximately 431 MMT CO_2e in 1990, 462 MMT CO_2e in 2000, 442 MMT CO_2e in 2010, and 369 MMT CO_2e in 2020. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

The WRCOG CAP provided a 2010 baseline inventory of GHG emissions and concluded that emissions from the subregion cities totaled 5,834,400 MT of CO_2e. The 2010 emissions inventory for the WRCOG cities is presented in Table 7, *Western Riverside Council of Governments Greenhouse Gas Emissions by Sector*. While the sectors included in this inventory are somewhat different from those in the statewide inventory, the results similarly demonstrate that transportation related GHG emissions contributed the most, followed by emissions associated with energy use.

Table 7
WESTERN RIVERSIDE COUNCIL OF GOVERNMENTS GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	2010 Baseline Emissions (MT CO_2e)	Percent of Total
Transportation	3,317,387	56.9%
Commercial/Industrial Energy	1,226,479	21.0%
Residential Energy	1,167,843	20.0%
Waste	112,161	1.9%
Wastewater	10,531	0.2%
TOTAL	5,834,400	

Source: WRCOG 2014
MT = metric tons; CO_2e = carbon dioxide equivalent

3.4 ENERGY

The environmental setting for the proposed Project related to electricity, natural gas, and petroleum, including associated service providers, supply sources, and estimated consumption, is discussed below.

3.4.1 Electricity

According to the U.S. Energy Information Administration (EIA), California used approximately 247,250 gigawatt hours (GWh) of electricity in 2020 (EIA 2023). Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building.

SCE provides electric services to more than 15 million people throughout a 50,000-square-mile service area that includes portions of central, coastal, and southern California, and provides electricity to the CLWTP (SCE 2019). According to the CEC, SCE customers consumed approximately 81,129 GWh of electricity in 2021 (CEC 2023a). SCE receives electric power from a variety of sources. According to CPUC's 2022 California Renewables Portfolio Standard Annual Report, 36% of SCE's power came from eligible renewable energy sources in 2021, primarily including solar, wind, and geothermal sources (CPUC 2022).

Based on recent energy supply and demand projections in California, statewide peak electricity demand is projected to reach 55,117 megawatts by 2035, an increase of 5.1 percent from the forecast prepared in 2021 (CEC 2023b).

3.4.2 Natural Gas

According to the EIA, California used approximately 2,101,000 million cubic feet of natural gas in 2020 (EIA 2023). The CPUC regulates natural gas utility service for approximately 10.8 million customers who receive natural gas from Pacific Gas & Electric, Southern California Gas, San Diego Gas & Electric, Southwest Gas, and several smaller natural gas utilities. CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage, and Gill Ranch Storage (CPUC 2023). Southern California Gas provides natural gas service to the City. Southern California Gas is a subsidiary of Sempra.

The majority of California's natural gas customers are residential and small commercial customers and account for approximately 35% of the natural gas delivered by California utilities. Large consumers, such as electric generators and industrial customers, account for approximately 65% of the natural gas delivered by California utilities (CPUC 2023). CPUC regulates California natural gas rates and natural gas services, including in-state transportation over transmission and distribution pipeline systems, storage, procurement, metering, and billing. Biogas (e.g., from wastewater treatment facilities or dairy farms) is just beginning to be delivered into the gas utility pipeline systems, and the State has been encouraging its development (CPUC 2023).

Most of the natural gas used in California comes from out-of-state natural gas basins. In 2017, California customers received 38% of their natural gas supply from basins located in the Southwest, 27% from Canada, 27% from the Rocky Mountains, and 8% from basins located within California (CPUC 2023). Natural gas from out-of-state production basins is delivered into California through the interstate natural gas pipeline system. The Federal Energy Regulatory Commission regulates the transportation of natural gas on interstate pipelines, and CPUC often participates in Federal Energy Regulatory Commission regulatory proceedings to represent the interests of California natural gas consumers (CPUC 2023).

Most of the natural gas transported through interstate pipelines, as well as some California-produced natural gas, is delivered through the Pacific Gas & Electric and Southern California Gas intrastate natural gas transmission pipeline systems prior to delivery into local transmission and distribution pipeline systems or to natural gas storage fields. CPUC has regulatory jurisdiction over 100,000 miles of transmission and distribution pipelines, and thousands more miles of service lines (CPUC 2023).

Pacific Gas & Electric and Southern California Gas own and operate several natural gas storage fields that are located in Northern and Southern California. These storage fields and four independently owned storage utilities—Lodi Gas Storage, Wild Goose Storage, Central Valley Storage, and Gill Ranch Storage—help meet peak-season natural gas demand and allow California natural gas customers to secure natural gas supplies more efficiently (CPUC 2023).

California's regulated utilities do not own any natural gas production facilities. All natural gas sold by these utilities must be purchased from suppliers and/or marketers. The price of natural gas sold by suppliers and marketers was deregulated by the Federal Energy Regulatory Commission in the mid-1980s and is determined by market forces. However, CPUC decides whether California's utilities have

taken reasonable steps to minimize the cost of natural gas purchased on behalf of its residential and small commercial customers (CPUC 2023).

As indicated in the preceding discussion, natural gas is available from a variety of in-state and out-of-state sources and is provided throughout the state in response to market supply and demand. Complementing available natural gas resources, biogas is becoming available through existing delivery systems, thereby increasing the availability and reliability of resources.

3.4.3 Petroleum

According to the EIA, California used an estimated total of approximately 605 million barrels of petroleum in 2021, with the majority (511 million barrels) used for the transportation sector (EIA 2023). This total annual consumption equates to a daily use of approximately 1.8 million barrels of petroleum. There are 42 U.S. gallons in a barrel, so California consumes approximately 76 million gallons of petroleum per day, adding up to an annual consumption of 27 billion gallons of petroleum. In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel.

Petroleum currently accounts for the majority of California's transportation energy consumption. However, technological advances, market trends, consumer behavior, and government policies could result in significant changes in fuel consumption by type and in total. At the federal and state levels, various policies, rules, and regulations have been enacted to improve vehicle fuel efficiency, promote the development and use of alternative fuels, reduce transportation-source air pollutants and GHG emissions, and reduce vehicle miles traveled.

4.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.1 METHODOLOGY

Criteria pollutant and GHG emissions for the Project were calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1.1.12. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. The model was developed for CAPCOA in collaboration with the California air districts. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The calculation methodology and default input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices (CAPCOA 2022). The input data and subsequent construction and operation emission estimates for the proposed Project are discussed below. CalEEMod output files for the Project are included in Appendix A to this report.

4.1.1 Construction Emissions

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. In compliance with SCAQMD Rule 403, fugitive dust emissions calculations assume application of water on exposed

surface a minimum of two times per day, a speed limit of 25 mph enforced for vehicles traveling on unpaved surfaces, and sweep paved roads once per month. CalEEMod estimates construction emissions for each year of construction activity based on the annual construction equipment profile and other factors determined as needed to complete all phases of construction by the target completion year. As such, each year of construction activity has varying quantities of GHG emissions. Per SCAQMD guidance, total construction GHG emissions resulting from the Project are amortized over 30 years and added to operational GHG emissions.

4.1.1.1 Construction Activities

Construction emissions were estimated based on the timeline provided by the Project applicant, which assumes construction would commence with demolition/site preparation in November 2023, and CalEEMod defaults. The quantity, duration, and intensity of construction activity influence the amount of construction emissions and 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 activity 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 assumed in CalEEMod; and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval).

Construction is assumed to occur five days per week with equipment operating up to eight hours per day. The construction schedule assumed in the modeling is shown in Table 8, *Anticipated Construction Schedule*.

Table 8
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Activity	Construction Period Start	Construction Period End	Number of Working Days
Demolition	2/1/2024	7/3/2024	110
Clearing and Grubbing	7/4/2024	9/11/2024	50
Structural Foundations/Buildings	9/12/2024	2/12/2025	110
Major Equipment Process Installation	2/13/2025	5/28/2025	75
Piping Installation	5/29/2025	11/26/2025	130
Electrical Equipment Installation	11/27/2025	3/4/2026	70

Source: CalEEMod (complete data is provided in Appendix A)

4.1.1.2 Construction Off-Road Equipment

Construction would require the use of heavy off-road equipment. Construction equipment estimates for other activities estimates are based on assumptions provided by the Project applicant and default values in CalEEMod. Table 9, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each stage of construction.

Table 9
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Equipment	Horsepower	Number	Hours/Day
Demolition			
Rubber Tired Dozers	367	2	8
Excavators	36	3	8
Concrete/Industrial Saws	33	1	8
Tractor/Loader/Backhoe	84	1	6
Rollers	36	1	6
Pavers	81	1	6
Clearing and Grubbing			
Rubber Tired Dozers	367	3	8
Tractor/Loader/Backhoe	84	4	8
Skid Steer Loaders	71	1	6
Graders	148	1	6
Structural Foundations/Buildings			
Forklifts	82	3	8
Generator Sets	14	1	8
Welders	46	1	8
Tractors/Loaders/Backhoes	84	3	7
Cement and Mortar Mixers	10	1	6
Pumps	11	1	6
Major Equipment Process Installation			
Forklifts	82	3	8
Generator Sets	14	1	8
Cranes	367	1	7
Welders	46	1	8
Tractors/Loaders/Backhoes	84	3	7
Air Compressors	37	1	8
Piping Installation			
Graders	148	1	6
Trenchers	40	1	6
Tractors/Loaders/Backhoes	84	1	6
Electrical Equipment Installation			
Forklifts	82	3	8
Generator Sets	14	1	8
Cranes	367	1	7
Welders	46	1	8
Tractors/Loaders/Backhoes	84	3	7

CalEEMod output is provided in Appendix A

4.1.1.3 Construction On-Road Trips

Worker commute trips and vendor delivery trips were modeled based on CalEEMod defaults. Worker trips are anticipated to vary between 3 and 23 trips per day, depending on construction activity. Vendor delivery trips would be once per day. Based on the model default of 16 CY per load, exporting soil would require 48 one-way haul trips per day during the 10-week grading period. The CalEEMod default worker, vendor and haul trip distances were used in the model.

4.1.2 Operation Emissions

Operational impacts were estimated using CalEEMod. Operational sources of emissions would be limited to new vehicle trips and energy use. The Project would require six full-time employees and occasional chemical deliveries. Modeling assumed up to 12 one-way trips to the CLWTP would be made on a given day. The Project would use electricity pumping and treating the water. Electricity generation typically entails the combustion of fossil fuels, including natural gas and coal, which is then transmitted to end users. A project's electricity use is thus associated with the off-site or indirect emission of GHGs at the source of electricity generation (power plant). According to the Project engineers, the Project is anticipated to consume 3,482,141 kilowatt hours (kWh) per year. Operational emissions are calculated for the earliest anticipated full year of operation—2027.

4.1.3 Localized Significance Threshold Methodology

As part of the SCAQMD's environmental justice program, more attention has been focused on localized air quality effects. 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 has developed a 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. If a project exceeds the LST look up values, then the SCAQMD recommends that project-specific localized air quality modeling be performed.

The proposed Project is within SRA 25, Lake Elsinore, and would grade up to two acres of land in a day given the proposed equipment mix. The closest existing sensitive receptor location to the Project site is a single-family development located to the south along Via de la Valle approximately 290 feet from the proposed grading area. Construction of the water pipeline would occur within 50 feet of residential receptors but would use limited equipment and would not require substantial earth-moving activities. Therefore, the LSTs in SRA 25 for project sites of 2 acres with receptors located within 50 meters (164 feet) are used in this analysis. The majority of Project construction would take place within and surrounding the existing CLWTP components, which are located approximately 290 feet from the nearest residences to the south and west.

4.1.4 Energy Consumption

4.1.4.1 Units of Measure

The units of energy used in this section are the British thermal units (Btu), kWh, therms, and gallons. A Btu is the quantity of heat required to raise the temperature of one pound of water one °F at sea level. Because the other units of energy can all be converted into equivalent Btu, the Btu is used as the basis for comparing energy consumption associated with different resources and is often expressed in millions of Btus (MMBTU). A kWh is a unit of electrical energy, and one kWh is equivalent to approximately 3,413

Btus, taking into account initial conversion losses (i.e., from one type of energy, such as chemical, to another type of energy, such as mechanical) and transmission losses. Natural gas consumption is described typically in terms of cubic feet or therms; one cubic foot of natural gas is equivalent to approximately 1.05 MMBtu, and one therm represents 0.1 MMBtu. One gallon of gasoline/diesel is equivalent to approximately 0.125/0.139 MMBtu, respectively, taking into account energy consumed in the refining process.

4.1.4.2 Modeling and Calculations

The proposed Project's direct electricity was estimated from the air quality and GHG emissions Project modeling completed using CalEEMod, as described previously. Fuel consumption factors in terms of gallons per hour of diesel for off-road equipment were calculated using data from the CARB Mobile Source Emissions Inventory online database–OFFROAD2021 version 1.0.4 (CARB 2023e). Fuel consumption factors, in terms of gallon of diesel and gasoline per mile travel, were calculated from the CARB Mobile Source Emissions Inventory online database–EMFAC2021 version 1.0.2 (CARB 2023e). The energy calculation sheets are included as Appendix B.

4.2 SIGNIFICANCE CRITERIA

4.2.1 Air Quality

Thresholds used to evaluate potential air quality and odor impacts are based on applicable criteria in the State's 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 10, *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 10
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)	
SO_2	1-hour average ≥ 0.075 ppm 24-hour average ≥ 0.04 ppm	

Source: SCAQMD 2019
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; µg/m^3 = micrograms per cubic meter

4.2.2 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 believed to be appropriate in the context of this particular Project.

On December 5, 2008, the SCAQMD Governing Board adopted their Interim CEQA GHG Significance Threshold for Stationary Sources, Rules, and Plans for projects where the SCAQMD is the lead agency. The SCAQMD's interim GHG significance threshold uses a tiered approach to determining significance. Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA. Tier 2 consists of determining whether or not the project is consistent with a GHG emission reduction plan that may be part of a local general plan, for example. Tier 3 establishes a screening significance threshold level to determine significance using a 90 percent emission capture rate approach, which corresponds to 10,000 MT CO_2e emissions per year for stationary sources at industrial facilities. Tier 4, to be based on performance standards, is yet to be developed. Under Tier 5 the project proponent would allow offsets to reduce GHG emission impacts to less than the proposed screening level.

The SCAQMD has continued to consider adoption of significance thresholds for residential and general development projects. The most recent proposal issued in September 2010 uses the following tiered approach to evaluate potential GHG emission impacts from various uses. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e/year), commercial projects (1,400 MT CO_2e/year), and mixed-use projects (3,000 MT CO_2e/year). Under option 2, a single numerical screening threshold of 3,000 MT CO_2e/year would be used for all non-industrial projects. These thresholds have not been adopted by the SCAQMD or distributed for widespread public review and comment, and the working group tasked with developing the thresholds has not met since September 2010. The future schedule and likelihood of threshold adoption is uncertain.

If the CARB adopts statewide significance thresholds, SCAQMD staff plans to report back to the SCAQMD Governing Board regarding any recommended changes or additions to the SCAQMD's interim threshold.

As the City does not currently have any approved quantitative thresholds related to GHG emissions, the quantitative analysis provided herein relies upon the SCAQMD adopted screening threshold for industrial facility projects of 10,000 MT CO_2e (SCAQMD 2008).

4.2.3 Energy

According to Appendix G of the CEQA Guidelines, a project would have a significant environmental impact if it would:

1. Result in the wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

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

4.2.4 General Conformity

EVMWD is seeking financing from the State Water Resources Control Board (SWRCB) Drinking Water State Revolving Fund (DWSRF) Program for the Project. Because the DWSRF Program is partially funded by the USEPA, the Project requires 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 nonattainment 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) vary by pollutant and also depend on the severity of the nonattainment 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 thresholds, then the conformity evaluation process is completed. *De minimis* threshold emissions are presented in Table 11, *General Conformity De Minimis Levels*. The thresholds used for the general conformity analysis for this Project are 10 tons per year for VOCs and NO_X, as the SCAB is classified as an extreme nonattainment area for the 8-hour NAAQS for ozone and 70 tons per year for $PM_{2.5}$ as the SCAB is classified as a serious nonattainment area for $PM_{2.5}$.

Table 11
GENERAL CONFORMITY DE MINIMIS LEVELS

Pollutant	Area Type	Tons per Year
Ozone (VOCs or NO_X)	Extreme nonattainment area	10
$PM_{2.5}$	Serious nonattainment area	70

Source: 40 CFR 93.153(b)

VOCs = volatile organic compounds; NO_X = nitrogen oxides

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 of this report.

5.1 ISSUE 1: CONFLICTS WITH AIR QUALITY PLANS

5.1.1 Impacts

The SCAQMD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SCAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the AQMP, prepared by the SCAQMD for the region. SCAG has prepared the RTP/SCS, a long-range transportation plan that uses growth forecasts to project trends out over a 20-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 exceed the assumptions in the AQMP.

With respect to the first criterion, the analyses presented below demonstrate that the Project would not generate short-term or 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.

With respect to the second criterion, the Project proposes improvements to the CLWTP to provide water treatment services to the region. The capacity of the CLWTP would be increased with implementation of the Project to serve existing and planned populations but would not result in population or employment increases itself and, therefore, would not exceed the growth projection assumptions in the AQMP. Employees that would construct the Project would be recruited from the local pool of labor and would not create employment growth exceeding growth estimates for the area. Six new employees would be required to operate the Project and would not exceed employment growth estimates for the region. The proposed CLWTP improvements would serve existing and planned development and would not create conditions for the creation of new housing, which would thereby induce population growth.

Because the Project would not generate population and employment growth beyond the levels assumed for the region, pursuant to SCAQMD guidelines, the proposed Project is considered consistent with the region's AQMP. As such, proposed Project-related emissions are accounted for in the AQMP, which is crafted to bring the basin into attainment for all criteria pollutants. Accordingly, the proposed Project

[2] SCAG serves as the federally designated metropolitan planning organization for the southern California region.

would be consistent with the emissions projections in the AQMP, thus resulting in a less than significant impact.

5.1.2 Significance of Impacts

Implementation of the Project would not conflict with or obstruct implementation of the SCAQMD's AQMP, and the impact would be less than significant.

5.1.3 Mitigation Framework

Impacts would be less than significant; therefore, no mitigation measures are required.

5.1.4 Significance After Mitigation

Impacts related to conflicts with the applicable air quality plan would be less than significant.

5.2 ISSUE 2: CUMULATIVELY CONSIDERABLE NET INCREASE OF NONATTAINMENT CRITERIA POLLUTANTS

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the SCAB. The region is a federal and/or state nonattainment area for ozone, PM_{10} and $PM_{2.5}$. In accordance with CEQA Guidelines Section 15064(h)(3), the SCAQMD's approach for assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and State Clean Air Acts. If a project conflicts with the AQMP, which is intended to bring the SCAB into attainment for all criteria pollutants, that project can be considered cumulatively considerable. Additionally, if the mass regional emissions calculated for a project exceed the applicable SCAQMD daily significance thresholds that are designed to assist the region in attaining the applicable state and national ambient air quality standards, that project can be considered cumulatively considerable. As discussed in Issue 1, above, the Project would not conflict with or obstruct implementation of the AQMP.

5.2.1 Impacts

The Project would generate criteria pollutants and precursors in the short-term during construction. Project operations would primarily result in increased electric demand and associated indirect GHG emissions. As described in Section 4.1.2, the Project is anticipated to result in 12 one-way, daily vehicle trips. To determine whether a project would result in cumulatively considerable emissions that would violate an air quality standard or contribute substantially to an existing or projected air quality violation, a project's emissions are evaluated based on the quantitative emission thresholds established by the SCAQMD (as shown in Table 10).

5.2.1.1 Construction

The Project's construction emissions were estimated using the CalEEMod model as described in Section 4.1.1. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

The results of the calculations for Project construction are shown in Table 12, *Maximum Daily Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the SCAQMD thresholds.

Table 12
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Activity	Pollutant Emissions (pounds/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Demolition	3.0	27.9	27.4	<0.1	1.6	1.2
Clearing and Grubbing	4.2	43.0	39.6	0.1	10.8	6.0
Structural Foundations/Buildings	1.0	8.6	11.2	<0.1	0.4	0.4
Major Equipment Process Installation	2.9	11.7	14.8	<0.1	0.5	0.4
Piping Installation	0.5	4.1	5.8	<0.1	0.3	0.2
Electrical Equipment Installation	1.1	10.5	13.2	<0.1	0.5	0.4
Maximum Daily Emissions	**4.2**	**43.0**	**39.6**	**0.1**	**10.8**	**6.0**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
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 12, construction period emissions of criteria pollutants and precursors would not exceed the SCAQMD significance thresholds.

5.2.1.2 Operation

The Project's operational emissions would primarily consist of indirect GHG emissions from electricity consumption. Mobile emissions from new employee trips and area emissions from the use of typical maintenance materials would generate less than one pound per day of each criteria pollutant. The full model output is provided in Appendix A. Operation of the Project would not result in emissions exceeding the SCAQMD significance thresholds for operation.

5.2.2 Significance of Impacts

Short-term construction and long-term operation of the Project would not result in criteria pollutant and precursor pollutant emissions that would exceed the SCAQMD significance thresholds, and the impact would be less than significant.

5.2.3 Mitigation Framework

Project emissions would not exceed the SCAQMD thresholds, would be less than significant, and no mitigation measures would be required.

5.2.4 Significance After Mitigation

The Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the SCAB is non-attainment, and the impact would be less than significant.

5.3 ISSUE 3: IMPACTS TO SENSITIVE RECEPTORS

5.3.1 Impacts

5.3.1.1 Construction Activities

Criteria Pollutants

The localized effects from the on-site portion of daily construction emissions were evaluated at sensitive receptor locations potentially impacted by the Project according to the SCAQMD's LST method, described above. The proposed Project is within SRA 25, Lake Elsinore. 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 do not contribute to emissions generated on a project site. The closest existing sensitive receptor location to the proposed grading area of the Project site is a single-family development located to the south along Via de la Valle approximately 290 feet from the limits of disturbance. Therefore, the LSTs in SRA 25 for project sites of 2 acres with receptors located within 50 meters (164 feet) are used in this analysis. Table 13, *Maximum Localized Daily Construction Emissions*, shows the localized construction emissions.

Table 13
MAXIMUM LOCALIZED DAILY CONSTRUCTION EMISSIONS

Activity	Pollutant Emissions (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Demolition	27.7	25.5	1.3	1.1
Clearing and Grubbing	39.2	36.8	9.6	5.6
Structural Foundations/Buildings	8.5	10.9	0.4	0.4
Major Equipment Process Installation	11.6	14.6	0.5	0.4
Piping Installation	4.1	5.3	0.2	0.2
Electrical Equipment Installation	10.4	13.0	0.4	0.4
Maximum Daily Emissions	**39.2**	**36.8**	**9.6**	**5.6**
SCAQMD LST Thresholds	*275*	*1,100*	*20*	*6*
Exceed LST?	***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; SCAQMD = South Coast Air Quality Management District; LST = Localized Significance Threshold

As shown in Table 13, localized emissions for all criteria pollutants would remain below their respective SCAQMD LSTs. Therefore, construction of the Project would not result in exposure of sensitive receptors to substantial localized concentrations of criteria pollutants and precursors.

Toxic Air Contaminants

Implementation of the Project would result in the use of heavy-duty construction equipment, haul trucks, on-site 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 to would also vary throughout the construction period. During some equipment-intensive phases such as grading, construction-related emissions would be higher than other less equipment-intensive phases such as building construction. 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 consistent 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, and the fact that construction activities would occur at various locations and varying intensities throughout the Project site, it is not anticipated that construction of the Project would expose sensitive receptors to substantial DPM concentrations.

5.3.1.2 Operational Activities

The Project's operational emissions would be limited to vehicle emissions and indirect GHG emissions from electricity consumption. The addition of up to 12 daily vehicle trips would not cause congestion or result in substantial quantities of criteria pollutants at sensitive receptors.

5.3.2 Significance of Impacts

Construction and operation of the Project would not result in significant localized concentrations of criteria pollutants or TACs. Therefore, implementation of the Project could expose sensitive receptors to substantial pollutant concentrations, and the impact less than significant.

5.3.3 Mitigation Framework

Impacts would be less than significant; therefore, no mitigation measures are required.

5.3.4 Significance After Mitigation

Implementation of the Project would not expose sensitive receptors to substantial pollutant concentrations, and the impact would be less than significant.

5.4 ISSUE 4: OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS)

5.4.1 Impacts

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 is proposing improvements to the CLWTP to provide water treatment services to the region and would not include any of these uses nor are there any of these land uses in the Project vicinity.

Emissions from construction equipment, such as diesel exhaust, 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. Furthermore, short-term construction-related odors are expected to cease upon Project buildout. Long-term operation of the Project would be similar to existing conditions and would not be a substantial source of objectionable odors. Therefore, the Project would not create objectionable odors affecting a substantial number of people, and the impact would be less than significant.

5.4.2 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.

5.4.3 Mitigation Framework

Impacts would be less than significant; therefore, no mitigation measures are required.

5.4.4 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 EMISSIONS 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 Construction Emissions

Project construction GHG emissions were estimated using the CalEEMod model as described in Section 4.1.1. Project-specific input was based on general information provided in Section 1.0 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.

Emissions of GHGs related to the construction of the Project would be temporary. As shown in Table 14, *Estimated Construction Greenhouse Gas Emissions*, total GHG emissions associated with construction of the Project are estimated at approximately 748 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. Averaged over 30 years, the proposed construction activities would contribute approximately 25 MT CO_2e emissions per year.

Table 14
ESTIMATED CONSTRUCTION GREENHOUSE GAS EMISSIONS

Year	Emissions (MT CO_2e)
2024	501.0
2025	195.8
2026	50.6
Total[1]	**747.5**
Amortized Construction Emissions[2]	*24.9*

CalEEMod output data is provided in Appendix A
[1] Totals may not sum due to rounding.
[2] Construction emissions are amortized over 30 years in accordance with SCAQMD guidance.
MT = metric tons; CO_2e = carbon dioxide equivalent

6.1.2 Operational Emissions

The Project's operational GHG emissions would include vehicle emissions and indirect emissions from electricity use, which were estimated using CalEEMod as described in Section 4.1.2. The Project's net annual GHG emissions, including amortized annual construction emissions, are shown in Table 15, *Operational Greenhouse Gas Emissions*. Appendix A contains the CalEEMod output files for the Project.

Table 15
OPERATIONAL GREENHOUSE GAS EMISSIONS

Emission Sources	2027 Emissions (MT CO_2e)
Mobile	42.5
Operational Energy	550.0
Construction (Annualized over 30 years)	24.9
Project Total[1]	**617.6**
SCAQMD Screening Threshold	**10,000**
Exceed Threshold?	**No**

Source: CalEEMod (output data is provided in Appendix A)
[1] Totals may not sum due to rounding.
MT = metric tons; CO_2e = carbon dioxide equivalent

As shown in Table 15, the Project emissions, including amortized construction emissions, would not exceed the industrial facility SCAQMD GHG screening threshold of 10,000 MT CO_2e per year.

6.1.3 Significance of Impacts

Project GHG emissions, including amortized construction emissions, would not exceed the SCAQMD industrial screening threshold, and the impact would be less than significant.

6.1.4 Mitigation Framework

Impacts would be less than significant; therefore, no mitigation measures are required.

6.1.5 Significance After Mitigation

Implementation of the Project would not generate GHG emissions that may have a significant impact on the environment, and the impact would be less than significant.

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. The principal overall State plan and policy is AB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. SB 32 would require further reductions of 40 percent below 1990 levels by 2030. AB 1297 would require additional reduction to 85 percent below 1990 levels by 2045. Because the Project's operational year is post-2020, the Project aims to reach the quantitative goals set by SB 32 and AB 1297. 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. Therefore, the proposed Project would not conflict with those plans and regulations.

The overall intent of the Project is to replace aging infrastructure with new facilities in order to maximize water storage and the production of potable water. By improving upon an existing local source for potable water, the Project would reduce reliance on imported water, thereby reducing GHG emissions associated with having to pump water from across the State for consumption.

6.2.1.1 Consistency with CARB's Scoping Plan

The CARB Scoping Plan, approved in 2008 and updated in 2014, 2017, and 2022, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to individual projects, nor is it intended to be used for project-level evaluations. Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy use, high-GWP GHGs in consumer products) and changes to the vehicle fleet (e.g., Low Carbon Fuel Standard), among others. The proposed Project would not conflict with implementation of the measures identified in the Scoping Plan.

6.2.1.2 Consistency with SCAG RTP/SCS

SCAG's 2020-2045 RTP/SCS is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. It charts a path toward a more mobile, sustainable, and prosperous region by making connections between transportation networks, between planning strategies, and between the people whose collaboration can improve the quality of life for Southern Californians. Because the Project is not growth inducing, this type of consistency analysis does not apply. However, the major goals of the 2020-2045 RTP/SCS are outlined in Table 16, *Project Consistency with the SCAG RTP/SCS*, along with the Project's consistency with them.

Table 16
PROJECT CONSISTENCY WITH THE SCAG RTP/SCS

RTP/SCS Measure	Project Compliance
Encourage regional economic prosperity and global competitiveness.	Not Applicable. The Project would not inhibit SCAG from encouraging regional economic prosperity and global competitiveness.
Improve mobility, accessibility, reliability, and travel safety for people and goods.	Not Applicable. The Project would not inhibit SCAG from strengthening the regional transportation network for goods movement.
Enhance the preservation, security, and resilience of the regional transportation system.	Not Applicable. The Project would not inhibit SCAG from enhancing the resilience of the regional transportation system.
Increase person and goods movement and travel choices within the transportation system.	Not Applicable. The Project would not inhibit SCAG from increasing person and goods movement and travel choices within the transportation system.
Reduce greenhouse gas emissions and improve air quality.	Consistent. The Project would result in emissions during construction and operation; however, emissions would not exceed the SCAQMD significance thresholds. The Project would also support the use of local water supplies in place of more energy intensive imported water.
Support healthy and equitable communities.	Not Applicable. The Project would not inhibit SCAG from supporting healthy and equitable communities.
Adapt to a changing climate and support an integrated regional development pattern and transportation network.	Consistent. The Project would facilitate adaptation to climate change and would allow for increased utilization of local water resources. The Project would reduce reliance upon imported water supplies from the MWD.
Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	Not Applicable. The Project would not inhibit SCAG from leveraging technology for the transportation system.
Encourage development of diverse housing types in areas that are supported by multiple transportation options.	Not Applicable. The Project would not inhibit SCAG from encouraging development of diverse housing types.
Promote conservation of natural and agricultural lands and restoration of habitats.	Not Applicable. The Project would not inhibit SCAG from promoting conservation and restoration of natural lands.

Source: SCAG 2020
SCAG = Southern California Association of Governments; RTP = Regional Transportation Plan; SCS = Sustainable Communities Strategy

As shown in Table 16, the Project would be consistent with all applicable goals within the SCAG RTP/SCS.

6.2.2 Significance of Impacts

The Project would not conflict with applicable GHG emission reduction plans including CARB's Scoping Plan and SCAG's RTP/SCS, and the impact would be less than significant.

6.2.3 Mitigation Framework

Impacts would be less than significant, and no mitigation would be required.

6.2.4 Significance After Mitigation

The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and the impact would be less than significant.

7.0 ENERGY

7.1 RESULT IN WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES

7.1.1 Construction Energy Use

Construction activities would require the use of diesel fuel, gasoline, and other fuels. Energy use during construction typically involves the use of motor vehicles for transportation of workers and materials and the use of motorized equipment for direct construction actions such as moving soil and demolishing structures. The estimated combined construction energy that would be used during construction activities is shown in Table 17, *Construction Energy Use*. As shown in Table 17, total Project construction activities would result in the consumption of approximately 29,966 gallons of diesel fuel and approximately 3,726 gallons of gasoline. The total construction energy use would be approximately 4,627 MMBTUs.

Table 17
CONSTRUCTION ENERGY USE

Source	Diesel (gallons)	Gasoline (gallons)	Total Energy (MMBTU)
Off-Road Construction Vehicles	22,709	-	3,157
On-Road Construction Vehicles	7,256	3,726	1,471
TOTAL[1]	29,966	3,726	4,627

Source: CalEEMod; CARB EMFAC2021; CARB OFFROAD2021; Appendix B.
[1] Totals may not sum due to rounding.
MMBTU = million British thermal units

Construction activities are not anticipated to result in an inefficient use of energy. Since the use of gasoline and diesel fuel would be a significant portion of construction costs, contractors and equipment operators would minimize the use of fuel within the constraints of Project requirements. Construction

equipment would be maintained in optimal working order and rated energy efficient and on-site vehicle idling would be minimized to reduce the use of gasoline and diesel.

Due to the short-term nature of the construction activities and the total amount of diesel and gasoline fuel anticipated to be consumed, the Project's consumption of energy (primarily diesel fuel) during construction would not represent a substantial demand on energy resources or result in the need to develop any new, or alter any existing, energy production or distribution facilities. In addition, construction-related energy would not be used in a wasteful, inefficient, or unnecessary manner.

7.1.2 Operational Energy Use

Energy use associated with operation would result from increased electricity use and vehicle trips. The Project is anticipated to consume 3,482 megawatt-hours (MWh) of electricity per year.

The purpose of the Project is to make necessary improvements to the existing CLWTP, as well as additional infrastructure necessary to accommodate planned growth in the area. Energy usage would be limited to operations necessary for the treatment of water and transportation of employees to maintain operations at the CLWTP. Therefore, the Project would not consume energy in a wasteful, inefficient, or unnecessary manner, and impacts would be less than significant.

7.2 CONFLICT WITH OR OBSTRUCT A STATE OR LOCAL PLAN FOR RENEWABLE ENERGY OR ENERGY EFFICIENCY

The purpose of the Project is to make necessary improvements to the existing CLWTP, as well as additional infrastructure necessary to accommodate planned growth in the area. Energy usage would be limited to operations necessary for the treatment of water. By improving upon an existing local source for potable water, the Project would reduce reliance on imported water, thereby reducing energy demand associated with having to pump water from across the State for consumption. The Project's demand on energy resources and services would not be anticipated to require the construction of new energy facilities or require improvements to local infrastructure. Therefore, impacts related to inconsistency with adopted plans and policies and energy waste would be less than significant.

8.0 CONFORMITY ANALYSIS

8.1 CONSTRUCTION EMISSIONS

The Project's construction emissions were estimated using CalEEMod, as described above. The emissions generated from construction activities include:

- Dust (including PM_{10} and $PM_{2.5}$) primarily from fugitive sources such as soil disturbance and vehicle travel over unpaved surfaces; and

- Combustion emissions of air pollutants (including ROG, NO_X, PM_{10}, $PM_{2.5}$, CO, and sulfur oxides [SO_X]), primarily from operation of heavy off-road equipment.

The results of the calculations for Project construction are shown in Table 18, *Construction Emissions*. The data are presented as the maximum annual construction emissions and compared with the

applicable *de minimis* limits, which are provided in tons per year. As shown in Table 18, the Project's maximum annual construction emissions would not exceed the annual *de minimis* thresholds. Therefore, no adverse impact would occur.

Table 18
CONSTRUCTION EMISSIONS

Criteria Pollutant (Attainment Status)	De Minimis Threshold (tons/year)	Construction Emissions (tons/year)	Adverse Effect?
VOC (Extreme Nonattainment Area)	10	0.3	No
NO_X (Extreme Nonattainment Area)	10	3.0	No
CO (Attainment)	--	2.9	No
SO_2 (Attainment)	--	<0.1	No
PM_{10} (Attainment)	--	0.4	No
$PM_{2.5}$ (Serious Nonattainment Area)	70	0.2	No

Source: 40 CFR 93.153
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; 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

8.2 OPERATIONAL EMISSIONS

The Project's operational emissions would be limited to a minor increase in vehicle trips and indirect GHG emissions from electricity consumption. Criteria pollutants generated by Project operation would not exceed annual *de minimis* thresholds.

8.2.1 Significance of Impacts

Short-term construction and long-term operation of the Project would not result in criteria pollutant and precursor pollutant emissions that would exceed the *de minimis* levels, and the impact would be less than significant.

8.2.2 Mitigation Framework

Project emissions would not exceed the *de minimis* levels, would be less than significant, and no mitigation measures would be required.

8.2.3 Significance After Mitigation

Project emissions would not exceed the *de minimis* levels and would be less than significant.

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Appendix A

CalEEMod Output

CLWTP Phase I Improvements Detailed Report

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5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

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	CLWTP Phase I Improvements
Construction Start Date	2/1/2024
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	9.20
Location	33.674883836135194, -117.27462030763306
County	Riverside-South Coast
City	Canyon Lake
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5510
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.14

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

User Defined Industrial	1.00	User Defined Unit	12.6	7,126	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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.01	4.15	43.0	39.6	0.08	1.82	8.98	10.8	1.68	4.27	5.95	—	9,555	9,555	0.31	0.60	8.32	9,749
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.61	3.04	27.9	26.9	0.04	1.20	0.37	1.57	1.11	0.08	1.19	—	4,357	4,357	0.18	0.06	0.04	4,378
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.03	1.69	16.2	15.9	0.03	0.70	1.35	2.05	0.64	0.61	1.25	—	2,992	2,992	0.11	0.10	0.70	3,026
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.37	0.31	2.96	2.91	< 0.005	0.13	0.25	0.37	0.12	0.11	0.23	—	495	495	0.02	0.02	0.12	501

2.2. Construction Emissions by Year, Unmitigated

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

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

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	5.01	4.15	43.0	39.6	0.08	1.82	8.98	10.8	1.68	4.27	5.95	—	9,555	9,555	0.31	0.60	8.32	9,749
2025	1.57	2.86	11.7	14.8	0.03	0.47	0.10	0.52	0.43	0.02	0.44	—	2,654	2,654	0.11	0.03	0.39	2,665
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.61	3.04	27.9	26.9	0.04	1.20	0.37	1.57	1.11	0.08	1.19	—	4,357	4,357	0.18	0.06	0.04	4,378
2025	1.57	2.86	11.7	14.7	0.03	0.47	0.10	0.52	0.43	0.02	0.44	—	2,650	2,650	0.11	0.03	0.01	2,661
2026	1.29	1.08	9.91	13.1	0.02	0.38	0.05	0.43	0.35	0.01	0.36	—	2,470	2,470	0.10	0.03	0.01	2,481
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.03	1.69	16.2	15.9	0.03	0.70	1.35	2.05	0.64	0.61	1.25	—	2,992	2,992	0.11	0.10	0.70	3,026
2025	0.73	0.93	5.27	6.91	0.01	0.23	0.05	0.28	0.21	0.01	0.22	—	1,178	1,178	0.05	0.01	0.10	1,183
2026	0.16	0.13	1.22	1.62	< 0.005	0.05	0.01	0.05	0.04	< 0.005	0.04	—	305	305	0.01	< 0.005	0.01	306
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.37	0.31	2.96	2.91	< 0.005	0.13	0.25	0.37	0.12	0.11	0.23	—	495	495	0.02	0.02	0.12	501
2025	0.13	0.17	0.96	1.26	< 0.005	0.04	0.01	0.05	0.04	< 0.005	0.04	—	195	195	0.01	< 0.005	0.02	196
2026	0.03	0.02	0.22	0.30	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	—	50.4	50.4	< 0.005	< 0.005	< 0.005	50.6

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.30	0.10	1.24	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	0.00	3,571	3,571	0.32	0.05	0.85	3,594

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.07	0.24	0.10	0.75	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	0.00	3,553	3,553	0.32	0.05	0.02	3,576
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	0.28	0.10	0.99	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	0.00	3,556	3,556	0.32	0.05	0.37	3,579
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	0.05	0.02	0.18	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.00	589	589	0.05	0.01	0.06	593

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.07	0.06	0.09	0.93	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	—	267	267	0.01	0.01	0.85	271
Area	0.06	0.24	< 0.005	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.27	1.27	< 0.005	< 0.005	—	1.28
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	3,303	3,303	0.31	0.04	—	3,322
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.13	0.30	0.10	1.24	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	0.00	3,571	3,571	0.32	0.05	0.85	3,594
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.07	0.06	0.10	0.75	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	—	250	250	0.01	0.01	0.02	254
Area	—	0.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	3,303	3,303	0.31	0.04	—	3,322

Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.07	0.24	0.10	0.75	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	0.00	3,553	3,553	0.32	0.05	0.02	3,576
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.07	0.06	0.10	0.78	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	—	253	253	0.01	0.01	0.37	256
Area	0.04	0.22	< 0.005	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.87	0.87	< 0.005	< 0.005	—	0.88
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	3,303	3,303	0.31	0.04	—	3,322
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.11	0.28	0.10	0.99	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	0.00	3,556	3,556	0.32	0.05	0.37	3,579
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.02	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	41.8	41.8	< 0.005	< 0.005	0.06	42.5
Area	0.01	0.04	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.14	0.14	< 0.005	< 0.005	—	0.15
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	547	547	0.05	0.01	—	550
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	0.05	0.02	0.18	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.00	589	589	0.05	0.01	0.06	593

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

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

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

Off-Road Equipment	3.49	2.93	27.7	25.5	0.04	1.20	—	1.20	1.10	—	1.10	—	3,986	3,986	0.16	0.03	—	4,000
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	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	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.49	2.93	27.7	25.5	0.04	1.20	—	1.20	1.10	—	1.10	—	3,986	3,986	0.16	0.03	—	4,000
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	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	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05	0.88	8.35	7.68	0.01	0.36	—	0.36	0.33	—	0.33	—	1,201	1,201	0.05	0.01	—	1,205
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 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	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.52	1.40	< 0.005	0.07	—	0.07	0.06	—	0.06	—	199	199	0.01	< 0.005	—	200
Demolition	—	—	—	—	—	—	< 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	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.13	0.12	0.11	1.88	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	324	324	0.01	0.01	1.28	329
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	73.2	73.2	< 0.005	0.01	0.15	76.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.13	1.42	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	298	298	0.01	0.01	0.03	301
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	73.3	73.3	< 0.005	0.01	< 0.005	76.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.45	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	90.8	90.8	< 0.005	< 0.005	0.17	92.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.1	22.1	< 0.005	< 0.005	0.02	23.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.03	15.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.65	3.65	< 0.005	< 0.005	< 0.005	3.83

3.3. Site Preparation (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.74	3.98	39.2	36.8	0.05	1.76	—	1.76	1.62	—	1.62	—	5,905	5,905	0.24	0.05	—	5,925

Dust From Material Movement	—	—	—	—	—	—	7.83	7.83	—	3.96	3.96	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	0.55	5.37	5.04	0.01	0.24	—	0.24	0.22	—	0.22	—	809	809	0.03	0.01	—	812
Dust From Material Movement	—	—	—	—	—	—	1.07	1.07	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.98	0.92	< 0.005	0.04	—	0.04	0.04	—	0.04	—	134	134	0.01	< 0.005	—	134
Dust From Material Movement	—	—	—	—	—	—	0.20	0.20	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.11	1.88	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	324	324	0.01	0.01	1.28	329
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.14	0.05	3.76	0.91	0.02	0.06	0.86	0.92	0.06	0.24	0.30	—	3,327	3,327	0.06	0.54	7.04	3,495

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	41.3	41.3	< 0.005	< 0.005	0.08	41.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.54	0.12	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	456	456	0.01	0.07	0.41	478
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.84	6.84	< 0.005	< 0.005	0.01	6.93
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.5	75.5	< 0.005	0.01	0.07	79.2

3.5. Building Construction (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.96	8.50	10.9	0.02	0.39	—	0.39	0.36	—	0.36	—	1,635	1,635	0.07	0.01	—	1,640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.96	8.50	10.9	0.02	0.39	—	0.39	0.36	—	0.36	—	1,635	1,635	0.07	0.01	—	1,640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.85	2.37	< 0.005	0.08	—	0.08	0.08	—	0.08	—	355	355	0.01	< 0.005	—	356
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.34	0.43	< 0.005	0.02	—	0.02	0.01	—	0.01	—	58.8	58.8	< 0.005	< 0.005	—	59.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.25	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.1	43.1	< 0.005	< 0.005	0.17	43.7
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.3	36.3	< 0.005	0.01	0.10	38.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	39.6	39.6	< 0.005	< 0.005	< 0.005	40.1
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.3	36.3	< 0.005	0.01	< 0.005	37.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.71	8.71	< 0.005	< 0.005	0.02	8.83
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.88	7.88	< 0.005	< 0.005	0.01	8.24
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.44	1.44	< 0.005	< 0.005	< 0.005	1.46

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.30	1.30	< 0.005	< 0.005	< 0.005	1.36
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.08	0.90	8.02	10.9	0.02	0.33	—	0.33	0.31	—	0.31	—	1,635	1,635	0.07	0.01	—	1,640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.67	0.91	< 0.005	0.03	—	0.03	0.03	—	0.03	—	138	138	0.01	< 0.005	—	138
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.12	0.17	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	22.8	22.8	< 0.005	< 0.005	—	22.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.8	38.8	< 0.005	< 0.005	< 0.005	39.3
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.8	35.8	< 0.005	0.01	< 0.005	37.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.30	3.30	< 0.005	< 0.005	0.01	3.35
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.01	3.01	< 0.005	< 0.005	< 0.005	3.15
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.55
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.52
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.55	1.30	11.6	14.6	0.03	0.47	—	0.47	0.43	—	0.43	—	2,576	2,576	0.10	0.02	—	2,585
Architectural Coatings	—	1.55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.55	1.30	11.6	14.6	0.03	0.47	—	0.47	0.43	—	0.43	—	2,576	2,576	0.10	0.02	—	2,585
Architectural Coatings	—	1.55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.27	2.39	2.99	0.01	0.10	—	0.10	0.09	—	0.09	—	529	529	0.02	< 0.005	—	531
Architectural Coatings	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.44	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	87.6	87.6	< 0.005	< 0.005	—	87.9
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.01	0.23	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	42.2	42.2	< 0.005	< 0.005	0.16	42.8
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.7	35.7	< 0.005	0.01	0.10	37.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.8	38.8	< 0.005	< 0.005	< 0.005	39.3
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.8	35.8	< 0.005	0.01	< 0.005	37.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.07	8.07	< 0.005	< 0.005	0.01	8.18
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.34	7.34	< 0.005	< 0.005	0.01	7.69
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.34	1.34	< 0.005	< 0.005	< 0.005	1.35
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.22	1.22	< 0.005	< 0.005	< 0.005	1.27
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.72	0.89	< 0.005	0.03	—	0.03	0.03	—	0.03	—	164	164	0.01	< 0.005	—	165
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.16	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	27.2	27.2	< 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	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.8	38.8	< 0.005	< 0.005	< 0.005	39.3
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.8	35.8	< 0.005	0.01	< 0.005	37.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.69	2.69	< 0.005	< 0.005	< 0.005	2.73
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.45	2.45	< 0.005	< 0.005	< 0.005	2.56
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.45
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.42
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.21	1.60	< 0.005	0.05	—	0.05	0.04	—	0.04	—	296	296	0.01	< 0.005	—	297
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.22	0.29	< 0.005	0.01	—	0.01	0.01	—	0.01	—	48.9	48.9	< 0.005	< 0.005	—	49.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.0	38.0	< 0.005	< 0.005	< 0.005	38.4
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.2	35.2	< 0.005	0.01	< 0.005	36.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.74	4.74	< 0.005	< 0.005	0.01	4.80
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.34	4.34	< 0.005	< 0.005	0.01	4.54
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.78	0.78	< 0.005	< 0.005	< 0.005	0.80
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.72	0.72	< 0.005	< 0.005	< 0.005	0.75
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Trenching (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.50	4.09	5.26	0.01	0.20	—	0.20	0.19	—	0.19	—	800	800	0.03	0.01	—	802
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.50	4.09	5.26	0.01	0.20	—	0.20	0.19	—	0.19	—	800	800	0.03	0.01	—	802

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.46	1.87	< 0.005	0.07	—	0.07	0.07	—	0.07	—	285	285	0.01	< 0.005	—	286
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.27	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.2	47.2	< 0.005	< 0.005	—	47.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.58	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	106	106	< 0.005	< 0.005	0.39	107
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	97.2	97.2	< 0.005	< 0.005	0.01	98.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	35.0	35.0	< 0.005	< 0.005	0.06	35.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.80	5.80	< 0.005	< 0.005	0.01	5.88
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.07	0.06	0.09	0.93	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	—	267	267	0.01	0.01	0.85	271
Total	0.07	0.06	0.09	0.93	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	—	267	267	0.01	0.01	0.85	271
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.07	0.06	0.10	0.75	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	—	250	250	0.01	0.01	0.02	254
Total	0.07	0.06	0.10	0.75	< 0.005	< 0.005	0.23	0.24	< 0.005	0.06	0.06	—	250	250	0.01	0.01	0.02	254
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.01	0.01	0.02	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	41.8	41.8	< 0.005	< 0.005	0.06	42.5
Total	0.01	0.01	0.02	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	41.8	41.8	< 0.005	< 0.005	0.06	42.5

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	3,303	3,303	0.31	0.04	—	3,322
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,303	3,303	0.31	0.04	—	3,322
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	3,303	3,303	0.31	0.04	—	3,322
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,303	3,303	0.31	0.04	—	3,322
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	547	547	0.05	0.01	—	550
Total	—	—	—	—	—	—	—	—	—	—	—	—	547	547	0.05	0.01	—	550

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.05	< 0.005	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.27	1.27	< 0.005	< 0.005	—	1.28
Total	0.06	0.24	< 0.005	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.27	1.27	< 0.005	< 0.005	—	1.28
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.14	0.14	< 0.005	< 0.005	—	0.15
Total	0.01	0.04	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.14	0.14	< 0.005	< 0.005	—	0.15

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

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

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

User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

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

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Demolition	Demolition	2/1/2024	7/3/2024	5.00	110	—
Clearing and Grubbing	Site Preparation	7/4/2024	9/11/2024	5.00	50.0	—
Structural Foundations/Buildings	Building Construction	9/12/2024	2/12/2025	5.00	110	—
Major Equipment Process Installation	Building Construction	2/13/2025	5/28/2025	5.00	75.0	—
Electrical Equipment Installation	Building Construction	11/27/2025	3/4/2026	5.00	70.0	—
Piping Installation	Trenching	5/29/2025	11/26/2025	5.00	130	—

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
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37

Demolition	Rollers	Diesel	Average	1.00	6.00	36.0	0.38
Demolition	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Clearing and Grubbing	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Clearing and Grubbing	Skid Steer Loaders	Diesel	Average	1.00	6.00	71.0	0.37
Clearing and Grubbing	Graders	Diesel	Average	1.00	6.00	148	0.41
Structural Foundations/Buildings	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Structural Foundations/Buildings	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Structural Foundations/Buildings	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Structural Foundations/Buildings	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Structural Foundations/Buildings	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Structural Foundations/Buildings	Pumps	Diesel	Average	1.00	6.00	11.0	0.74
Major Equipment Process Installation	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Major Equipment Process Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Major Equipment Process Installation	Cranes	Diesel	Average	1.00	7.00	367	0.29
Major Equipment Process Installation	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Major Equipment Process Installation	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Major Equipment Process Installation	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Electrical Equipment Installation	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20

Electrical Equipment Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Electrical Equipment Installation	Cranes	Diesel	Average	1.00	7.00	367	0.29
Electrical Equipment Installation	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Electrical Equipment Installation	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Piping Installation	Graders	Diesel	Average	1.00	6.00	148	0.41
Piping Installation	Trenchers	Diesel	Average	1.00	6.00	40.0	0.50
Piping Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	22.5	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	1.05	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Clearing and Grubbing	—	—	—	—
Clearing and Grubbing	Worker	22.5	18.5	LDA,LDT1,LDT2
Clearing and Grubbing	Vendor	—	10.2	HHDT,MHDT
Clearing and Grubbing	Hauling	47.5	20.0	HHDT
Clearing and Grubbing	Onsite truck	—	—	HHDT
Structural Foundations/Buildings	—	—	—	—
Structural Foundations/Buildings	Worker	2.99	18.5	LDA,LDT1,LDT2

Structural Foundations/Buildings	Vendor	1.17	10.2	HHDT,MHDT
Structural Foundations/Buildings	Hauling	0.00	20.0	HHDT
Structural Foundations/Buildings	Onsite truck	—	—	HHDT
Major Equipment Process Installation	—	—	—	—
Major Equipment Process Installation	Worker	2.99	18.5	LDA,LDT1,LDT2
Major Equipment Process Installation	Vendor	1.17	10.2	HHDT,MHDT
Major Equipment Process Installation	Hauling	0.00	20.0	HHDT
Major Equipment Process Installation	Onsite truck	—	—	HHDT
Electrical Equipment Installation	—	—	—	—
Electrical Equipment Installation	Worker	2.99	18.5	LDA,LDT1,LDT2
Electrical Equipment Installation	Vendor	1.17	10.2	HHDT,MHDT
Electrical Equipment Installation	Hauling	0.00	20.0	HHDT
Electrical Equipment Installation	Onsite truck	—	—	HHDT
Piping Installation	—	—	—	—
Piping Installation	Worker	7.50	18.5	LDA,LDT1,LDT2
Piping Installation	Vendor	—	10.2	HHDT,MHDT
Piping Installation	Hauling	0.00	20.0	HHDT
Piping Installation	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

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)
Major Equipment Process Installation	0.00	0.00	0.00	25,000	—

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 (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	10,000	—
Clearing and Grubbing	—	19,000	120	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%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O

2024	0.00	349	0.03	< 0.005
2025	0.00	349	0.03	< 0.005
2026	0.00	346	0.03	< 0.005

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
User Defined Industrial	12.0	12.0	12.0	4,380	331	331	331	120,763

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	0.00	25,000	—

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)
User Defined Industrial	3,482,141	346	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)
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Industrial	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

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

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	28.1	annual days of extreme heat
Extreme Precipitation	3.95	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	16.0	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 (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
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	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	N/A	N/A	N/A	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	N/A	N/A	N/A	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	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	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	N/A	N/A	N/A	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 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	84.6
AQ-PM	52.0
AQ-DPM	20.1
Drinking Water	68.8
Lead Risk Housing	14.3
Pesticides	0.00
Toxic Releases	23.0
Traffic	83.0
Effect Indicators	—
CleanUp Sites	7.71
Groundwater	37.6
Haz Waste Facilities/Generators	80.5
Impaired Water Bodies	51.2
Solid Waste	75.7
Sensitive Population	—
Asthma	33.4
Cardio-vascular	84.0
Low Birth Weights	41.1
Socioeconomic Factor Indicators	—
Education	50.2
Housing	30.6
Linguistic	11.3
Poverty	48.0

Unemployment	29.4

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	69.31861927
Employed	35.14692673
Median HI	73.06557167
Education	—
Bachelor's or higher	47.15770563
High school enrollment	100
Preschool enrollment	48.45374054
Transportation	—
Auto Access	91.71050943
Active commuting	4.978827153
Social	—
2-parent households	67.84293597
Voting	41.5629411
Neighborhood	—
Alcohol availability	88.05338124
Park access	24.81714359
Retail density	13.47363018
Supermarket access	19.72282818
Tree canopy	8.623123316
Housing	—
Homeownership	67.77877582

Housing habitability	89.11843963
Low-inc homeowner severe housing cost burden	58.12909021
Low-inc renter severe housing cost burden	93.91761838
Uncrowded housing	56.87155139
Health Outcomes	—
Insured adults	79.94353907
Arthritis	0.0
Asthma ER Admissions	79.1
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	47.6
Cognitively Disabled	95.5
Physically Disabled	83.0
Heart Attack ER Admissions	38.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	44.8
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	51.5
SLR Inundation Area	0.0
Children	43.1
Elderly	64.7
English Speaking	73.3
Foreign-born	47.1
Outdoor Workers	45.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	68.2
Traffic Density	78.6
Traffic Access	23.0
Other Indices	—
Hardship	46.7
Other Decision Support	—
2016 Voting	53.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	49.0
Healthy Places Index Score for Project Location (b)	59.0
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	12.6 acre site w/ 400 SF pump station building, 1,600 SF chemical storage building, 3,300 SF chemical storage tank, 576 SF sodium hypochlorite building, and 1,250 SF maintenance building
Construction: Construction Phases	Schedule based on Project engineer construction period estimation
Construction: Off-Road Equipment	Equipment listed in PD
Operations: Energy Use	Energy use provided by Project engineer
Construction: Dust From Material Movement	Grading plan provided by Project engineer, estimated to require 19,000 CY export.
Construction: Architectural Coatings	Per Project engineer, approximately 25,000 sf of exterior coatings required for buildings, pipes, and other equipment.
Operations: Vehicle Data	Per EVMWD, up to 6 employees will be required to staff the Project site. Chemical deliveries to occur infrequently (every 1-3 months).
Operations: Architectural Coatings	Per Project engineer, 25,000 sf of coatings to be applied.

Appendix B

Energy Modeling

Construction Energy Use

Off-Road Construction Equipment Energy Use

Phase	Equipment	Fuel	HP	Load Factor	Equipment Count	Hours/Day	Work Days	Gallons /HP-Hr	Gallons /Hour	Gallons /Day	Total Gallons	Total kBtu
Demolition	Rubber Tired Dozers	Diesel	367	0.4	2	8.0	110	0.0206133	3.02604	48.417	5,325.8	740,290
	Excavators	Diesel	36	0.38	3	8.0	110	0.0219769	0.30064	7.215	793.7	110,324
	Concrete/Industrial Saws	Diesel	33	0.73	1	8.0	110	0.0426202	1.02672	8.214	903.5	125,588
	Tractor/Loader/Backhoe	Diesel	84	0.37	1	6.0	110	0.0191339	0.59468	3.568	392.5	54,556
	Rollers	Diesel	36	0.38	1	6.0	110	0.0215723	0.29511	1.771	194.8	27,073
	Pavers	Diesel	81	0.42	1	6.0	110	0.0214225	0.72879	4.373	481.0	66,860
Clearing and Grubbing	Rubber Tired Dozers	Diesel	367	0.4	3	8.0	50	0.0206133	3.02604	72.625	3,631.2	504,743
	Tractor/Loader/Backhoe	Diesel	84	0.37	4	8.0	50	0.0191339	0.59468	19.030	951.5	132,257
	Skid Steer Loaders	Diesel	71	0.37	1	6.0	50	0.0190702	0.50097	3.006	150.3	20,891
	Graders	Diesel	148	0.41	1	6.0	50	0.0212307	1.28828	7.730	386.5	53,721
Structural Foundations/Buildings	Forklifts	Diesel	82	0.2	3	8.0	110	0.0103797	0.17023	4.085	449.4	62,466
	Generator Sets	Diesel	14	0.74	1	8.0	110	0.0175849	0.18218	1.457	160.3	22,284
	Welders	Diesel	46	0.45	1	8.0	110	0.0258105	0.53428	4.274	470.2	65,353
	Tractors/Loaders/Backhoes	Diesel	84	0.37	3	7.0	110	0.0191339	0.59468	12.488	1,373.7	190,946
	Cement and Mortar Mixers	Diesel	10	0.56	1	6.0	110	0.0000000	0.00000	0.000	-	-
	Pumps	Diesel	11	0.74	1	6.0	110	0.0175849	0.14314	0.859	94.5	13,132
Major Equipment Process Installation	Forklifts	Diesel	82	0.2	3	8.0	75	0.0103797	0.17023	4.085	306.4	42,591
	Generator Sets	Diesel	14	0.74	1	8.0	75	0.0175849	0.18218	1.457	109.3	15,194
	Cranes	Diesel	367	0.29	1	7.0	75	0.0148914	1.58489	11.094	832.1	115,658
	Welders	Diesel	46	0.45	1	8.0	75	0.0258105	0.53428	4.274	320.6	44,559
	Tractors/Loaders/Backhoes	Diesel	84	0.37	3	7.0	75	0.0191339	0.59468	12.488	936.6	130,190
	Air Compressors	Diesel	37	0.48	1	8.0	75	0.0175849	0.31231	2.498	187.4	26,047
Piping Installation	Graders	Diesel	148	0.41	1	6.0	130	0.0212307	1.28828	7.730	1,004.9	139,675
	Trenchers	Diesel	40	0.5	1	6.0	130	0.0289459	0.57892	3.474	451.6	62,766
	Tractors/Loaders/Backhoes	Diesel	84	0.37	1	6.0	130	0.0191339	0.59468	3.568	463.9	64,475
Electrical Equipment Installation	Forklifts	Diesel	82	0.2	3	8.0	70	0.0103797	0.17023	4.085	286.0	39,751
	Generator Sets	Diesel	14	0.74	1	8.0	70	0.0175849	0.18218	1.457	102.0	14,181
	Cranes	Diesel	367	0.29	1	7.0	70	0.0148914	1.58489	11.094	776.6	107,947
	Welders	Diesel	46	0.45	1	8.0	70	0.0258105	0.53428	4.274	299.2	41,588
	Tractors/Loaders/Backhoes	Diesel	84	0.37	3	7.0	70	0.0191339	0.59468	12.488	874.2	121,511
										Project Construction Off-Road Total	**22,709.5**	**3,156,619**

On-Road Construction Energy Use

Phase	Trip Type (Fleet Mix)	Trips	Distance (miles)		Work Days	Total VMT	gallons diesel/VMT		Total diesel gallons	gallons gas/VMT	Total gasoline gallons	Total kBtu
Demolition	Worker (LDA, LDT1, LDT2)	23	18.5		110	46805.0	7.12089E-05		3.33	0.036590833	1,712.63	212,830
	Hauling (HHDT)	1	20		110	2200.0	0.136521747		300.35	0.000039440	0.09	41,759
Clearing and Grubbing	Worker (LDA, LDT1, LDT2)	23	18.5		50	21275.0	7.12089E-05		1.51	0.036590833	778.47	96,741
	Hauling (HHDT)	48	20		50	48000.0	0.136521747		6553.04	0.000039440	1.89	911,108
Structural Foundations/Buildings	Worker (LDA, LDT1, LDT2)	3	18.5		110	6105.0	7.12089E-05		0.43	0.036590833	223.39	27,760
	Vendor (HHDT, MHDT)	1	10.2		110	1122.0	0.152164025		170.73	0.004163609	4.67	24,310
Major Equipment Process Installation	Worker (LDA, LDT1, LDT2)	3	18.5		75	4162.5	7.12089E-05		0.30	0.036590833	152.31	18,928
	Vendor (HHDT, MHDT)	1	10.2		75	765.0	0.152164025		116.41	0.004163609	3.19	16,575
Piping Installation	Worker (LDA, LDT1, LDT2)	8	18.5		130	19240.0	7.12089E-05		1.37	0.036590833	704.01	87,487
Electrical Equipment Installation	Worker (LDA, LDT1, LDT2)	3	18.5		70	3885.0	7.12089E-05		0.28	0.036590833	142.16	17,666
	Vendor (HHDT, MHDT)	1	10.2		70	714.0	0.152164025		108.65	0.004163609	2.97	15,470
					Project Construction On-Road Total	**154273.5**			**7256.4**		**3725.8**	**1470634.9**

Notes:
1. Off-road equipment types and horsepower from CalEEMod defaults.
2. Off-road equipment count and hours from CalEEMod for the AQ/GHG analysis.
3. Off-road fuel consumption factors from CARB OFFROAD2021- Web Database, for Riverside County, aggregate model years. https://arb.ca.gov/emfac/emissions-inventory/.
4. On-road fleet mix and trip distances from CalEEMod for the AQ/GHG analysis.
5. On-road fuel consumption factors weighted average for fleet mix from CARB EMFAC2021, for Riverside County, aggregate model years, aggregate speeds. https://arb.ca.gov/emfac/emissions-inventory/

Construction Energy Summary

Source	Gallons Diesel	Gallons Gas	kBtu
Off-Road Construction Equipment	22,709	-	3,156,619
On-Road Construction Traffic	7,256	3,726	1,470,635
Project Construction Total	**29,966**	**3,726**	**4,627,254**

Model Output: OFFROAD2021 (v1.0.4) Emissions Inventory
Region Type: County
Region: Riverside
Calendar Year: 2024
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Region	CalYr	VehClass	MdlYr	HP_Bin	Fuel	Fuel_gpy	Total_Activity_hpy	Total_Population	Horsepower_Hours_hhpy	Gallons/hp-hour
Riverside	2024	Construction and Mining - Rubber Tired Dozers	Aggregate	600	Diesel	354414.6561	46723.06225	62.64198561	17193457.66	0.02061334
Riverside	2024	Construction and Mining - Excavators	Aggregate	50	Diesel	285678.3166	363055.2318	485.1761133	12999027.14	0.02197690
Riverside	2024	Construction and Mining - Misc - Concrete/Industrial Saws	Aggregate	50	Diesel	2222.85	1580.45	2.72	52154.85	0.04262020
Riverside	2024	Construction and Mining - Tractors/Loaders/Backhoes	Aggregate	100	Diesel	3843992.204	2412635.273	3778.328288	200899855.2	0.01913387
Riverside	2024	Construction and Mining - Rollers	Aggregate	50	Diesel	160659.4432	208367.7787	588.3837688	7447500.91	0.02157226
Riverside	2024	Construction and Mining - Pavers	Aggregate	100	Diesel	66361.76606	38388.26122	95.62606507	3097758.688	0.02142251
Riverside	2024	Construction and Mining - Skid Steer Loaders	Aggregate	75	Diesel	643196.6708	477537.5441	1306.398148	33727814.1	0.01907022
Riverside	2024	Construction and Mining - Graders	Aggregate	175	Diesel	473367.5832	149784.2471	311.987171	22296365.58	0.02123071
Riverside	2024	Industrial - Forklifts	Aggregate	100	Diesel	297176.722	347344.8642	445.6987284	28630638.8	0.01037967
Riverside	2024	Portable Equipment - Non-Rental Generator	Aggregate	50	Diesel	3802.936834	4474.568463	3.261766823	216261.0707	0.01758493
Riverside	2024	Construction and Mining - Misc - Cement And Mortar Mixers	Aggregate	15	Diesel	47.81548358	0	40.57346616	0	0.00000000
Riverside	2024	Portable Equipment - Non-Rental Pump	Aggregate	50	Diesel	280.0139145	348.990759	1.087255608	15923.51165	0.01758493
Riverside	2024	Construction and Mining - Cranes	Aggregate	600	Diesel	463261.4109	84834.67103	167.4033954	31109279.96	0.01489142
Riverside	2024	Construction and Mining - Trenchers	Aggregate	50	Diesel	85063.01992	73677.56881	186.9596302	2938693.548	0.02894586
Riverside	2024	Light Commercial - Misc - Welders	Aggregate	50	Diesel	153504.4	129290.3	201.26	5947353.8	0.02581054
Riverside	2024	Portable Equipment - Non-Rental Compressor	Aggregate	50	Diesel	1618.152205	2235.322368	5.436278038	92019.23244	0.01758493

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: Riverside
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

2024 Construction Fleet Fuel Consumption								
Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	VMT	Fuel Consumption (1000 Gal.)	Gallons/VMT
Worker (LDA, LDT1, LDT2)								
Riverside	2024	LDA	Aggregate	Aggregate	Diesel	23467406.53	550.8585655	
Riverside	2024	LDT1	Aggregate	Aggregate	Diesel	184552.3879	7.565315892	
Riverside	2024	LDT2	Aggregate	Aggregate	Diesel	14146533.68	432.6141314	
					Diesel Total	**37798492.59**	**991.0380128**	**7.12089E-05**
Riverside	2024	LDA	Aggregate	Aggregate	Gasoline	9026169518	307217.5412	
Riverside	2024	LDT1	Aggregate	Aggregate	Gasoline	723077286.3	29861.92548	
Riverside	2024	LDT2	Aggregate	Aggregate	Gasoline	4130284696	172167.2291	
					Gasoline Total	**13879531500**	**509246.6959**	**0.036590833**
					Total VMT	**13917329993**		
Vendor (HHDT, MHDT)								
Riverside	2024	HHDT	Aggregate	Aggregate	Diesel	1299849740	211707.9614	
Riverside	2024	MHDT	Aggregate	Aggregate	Diesel	217266211.5	24221.91494	
					Diesel Total	**1517115952**	**235929.8764**	**0.152164025**
Riverside	2024	HHDT	Aggregate	Aggregate	Gasoline	229926.8053	61.15993723	
Riverside	2024	MHDT	Aggregate	Aggregate	Gasoline	33151205.76	6394.504234	
					Gasoline Total	**33381132.56**	**6455.664171**	**0.004163609**
					Total VMT	**1550497084**		
Hauling (HHDT)								
Riverside	2024	HHDT	Aggregate	Aggregate	Diesel	1299849740	211707.9614	0.136521747
Riverside	2024	HHDT	Aggregate	Aggregate	Gasoline	229926.8053	61.15993723	3.94395E-05
					Total VMT	**1550727011**		

Appendix B

Biological Resources Letter Report

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September 1, 2023 00407.00046.001

Mr. Bill Moser, P.E.
Senior Engineer
Kennedy/Jenks Consultants, Inc.
9325 Sky Park Court, Suite 300
San Diego, CA 92123

Subject: Biological Resources Letter Report for the Canyon Lake Water Treatment Plant Improvements Project – Phase 1

Dear Mr. Moser:

This report documents the results of a biological resources technical study completed by HELIX Environmental Planning, Inc. (HELIX) for the Canyon Lake Water Treatment Plant (CLWTP) Phase 1 Improvements Project (project) located within the City of Canyon Lake, Riverside County, California. The Elsinore Valley Municipal Water District (EVMWD) proposes to upgrade the existing water treatment plant (WTP), which generally consists of demolishing some existing facilities and constructing new facilities. For the purpose of this report, a Study Area was defined and included the CLWTP and an approximately 50-foot buffer surrounding proposed project work areas. This report summarizes the existing biological resources within the project Study Area and provides an analysis of the proposed impacts as a result of the project in accordance with the California Environmental Quality Act (CEQA). Additionally, this report provides an analysis of the project's conformance with the National Environmental Policy Act (NEPA) as well as a discussion on other applicable federal, state, and local policies.

PROJECT LOCATION

Location

The project is located in the City of Canyon Lake in southwestern Riverside County (Figure 1, *Regional Location*). It is depicted on the Lake Elsinore, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle, within Sections 2 and 3, Range 4 West and Township 6 South (Figure 2, *USGS Topography*). The project is directly adjacent to and includes a portion of Railroad Canyon Reservoir, referred to herein as Canyon Lake, to the north; the San Jacinto River to the east; and residential development along Via De La Valle to the south and west of the Study Area (Figure 3, *Location on Aerial*). The project is primarily located within the City of Canyon Lake; however, the driveway entrance to the WTP and approximately 300 feet of potable water pipeline along the driveway, occur within the

City of Lake Elsinore (Figure 3 and Figure 4a, *Project Plans*). The project will occur within the limits of the existing WTP and includes all or part of Assessor Parcel Numbers (APNs) 354-030-004, -015, -029, -030, -031, -032, -034, 363-080-005, and 363-365-028. The project is located outside of the Coastal Zone and outside of Critical Habitat designated by the U.S. Fish and Wildlife Service (USFWS).

PROJECT DESCRIPTION

The EVMWD is proposing to implement new treatment facilities at the CLWTP. The proposed project incorporates Phase 1 Improvements intended to address current capacity issues as well as improve water quality in Canyon Lake. The overall CLWTP site is approximately 12.6 acres. Overall, the project entails the demolition of selected existing CLWTP facilities and the construction of new replacement upgraded facilities, which are discussed in further detail below.

The proposed project would demolish the existing intake pump station (i.e., the four intake pumps, floating walkway, and floating barge within Canyon Lake), an old intake structure, the electrical building, and the raw water pipeline), static mixer (i.e., pipeline and platform motor), rapid mixer chamber tank, upflow clarifier, hypochlorite feed pipe gallery system, chemical feed system, storage rooms, and ancillary facilities. Following demolition, the project would construct a new intake pump station (i.e., four intake pumps, floating barge, gangway, and dock) at the lake; new static mixers and sedimentation/ flocculation basins; new equipment for per- and polyfluoroalkyl substances (PFAS), taste, and odor treatment; new booster and backwash pump stations; and chemical and maintenance buildings. Maintenance access to the intake pump station would be available from a gangway and dock in Canyon Lake (Figure 4b, *Intake Pump Station Piping Plan*, and Figure 4c, *Gangway and Dock Cross Section)*. The proposed improvements, as well as construction staging areas, would be located within the boundary of the existing CLWTP.

Project construction activities are anticipated to occur in eight main phases over an approximately 30-month period, starting as early as November 2023. Construction staging and laydown areas would be within the CLWTP facility (Figure 4a). The types of construction equipment anticipated to be required for the project include backhoe, excavator, skid steer, sheepsfoot roller, vibratory plates, roller/compactor, asphalt paver, and dump/cement trucks. Temporary impacts to 0.06 acre of coastal California gnatcatcher habitat from construction staging and laydown areas would be replanted upon project completion to reflect the pre-project habitat or better. Additionally, demolition and removal of existing facilities along the lake would also be planted with appropriate native habitat, as appropriate.

In addition, construction best management practices (BMPs) would be implemented as part of standard construction practices to prevent and reduce project impacts. Project construction would implement standard dust control measures as required by South Coast Air Quality Management District (SCAQMD) Rule 403, including watering two times daily during grading, ensuring that all exposed surfaces maintain a minimum soil moisture of 12 percent, and limiting vehicle speeds on unpaved roads to 15 miles per hour. All trucks hauling dirt, sand, soil, or other loose materials would be covered with a fabric cover and maintain a freeboard height of 12 inches.

Implementation of the proposed project would require conformance with the National Pollutant Discharge Elimination System (NPDES) requirements. Such conformance would entail the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) to address the discharge of

potential contaminants (including construction-related hazardous materials) and minimize runoff through the use of appropriate BMPs.

As a standard construction practice and regulatory requirement, EVMWD would implement BMPs from the required SWPPP for the project, which would include the following:

- Covering stockpiled excavated and/or fill materials to reduce potential off-site sediment transport;
- Employing appropriate standard spill prevention practices and clean-up materials;
- Maintaining the project area free of trash and debris;
- Properly storing, handling, and disposing of toxins and pollutants, including waste materials;
- Utilizing erosion control devices, such as straw wattles, mulch, mats, and/or geotextiles;
- Utilizing sediment catchment structures such as hay bales, gravel or sandbags, silt fencing, fiber rolls, matting, berms, or similar devices along grading boundaries and drainage courses to prevent off-site sediment transport;
- Daily backfilling, compaction, and/or covering of excavated trenches to minimize erosion potential; and/or
- Regularly inspecting and maintaining all erosion control and sediment catchment facilities to ensure proper function and effectiveness.

SURVEY METHODS

Literature Review

Before conducting the general biological field survey, HELIX performed a search through the following database applications to obtain information regarding sensitive biological resources known to occur within the vicinity (i.e., approximately three miles) of the Study Area: California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB; CDFW 2023a, b, and c), California Native Plant Society (CNPS) rare plant inventory (CNPS 2023a), USFWS Critical Habitat Portal (USFWS 2023a), USFWS National Wetlands Inventory (USFWS 2023b), and USFWS Information for Planning and Conservation (IPaC; USFWS 2023c).

General Biological Survey

HELIX biologist Rob Hogenauer conducted a general biological survey of the Study Area (i.e., CLWTP facilities and an approximate 50-foot buffer around proposed work areas) on March 17, 2023 (Table 1, *HELIX Survey Information*). This survey focused on inventorying and mapping existing vegetation communities (Figure 5, *Vegetation and Land Uses*); assessing habitat suitability for special-status species; preliminarily identifying potentially jurisdictional aquatic resources; and identifying other sensitive biological resources, such as potential nesting habitat for bird species protected under the Migratory Bird Treaty Act (MBTA). The Study Area was surveyed on foot with the aid of binoculars. Observed or detected plant and animal species were recorded during the survey and are listed in

Attachments A and B of this report, respectively. Animal identifications were made in the field by visual observation or detection of calls, burrows, tracks, scat, and other animal sign. Plant identifications were made in the field. Representative photos were taken and are included as Attachment C.

Table 1
HELIX SURVEY INFORMATION

Survey Date	Personnel	Purpose
March 17, 2023	Rob Hogenauer	General Biological Survey, Preliminary Jurisdictional Delineation, Burrowing Owl Habitat Assessment
March 27, 2023	Rob Hogenauer	Preliminary Jurisdictional Delineation follow-up, Burrowing Owl Burrow Survey, Rare Plant Survey 1
May 16, 2023	Rob Hogenauer	Jurisdictional Delineation, Burrowing Owl Burrow Survey, Rare Plant Survey 2
May 26, 2023	Dane van Tamelen	Coastal California Gnatcatcher Survey 1
June 2, 2023	Dane van Tamelen	Coastal California Gnatcatcher Survey 2
June 9, 2023	Dane van Tamelen Angelica Grunloh	Coastal California Gnatcatcher Survey 3
June 16, 2023	Dane van Tamelen Angelica Grunloh Shawn Carroll	Coastal California Gnatcatcher Survey 4
June 23, 2023	Dane van Tamelen Angelica Grunloh	Coastal California Gnatcatcher Survey 5
June 30, 2023	Dane van Tamelen Angelica Grunloh Shawn Carroll	Coastal California Gnatcatcher Survey 6

Jurisdictional Delineation

Before beginning fieldwork, aerial photographs, topographic maps and data (1"= 150' scale), and National Wetlands Inventory online maps were reviewed to assist in determining the location of potentially jurisdictional aquatic resources in the Study Area. Next, field delineations were conducted to identify and map potential water and wetland resources that could be subject to U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the Clean Water Act (CWA), subject to Regional Water Quality Control Board (RWQCB) jurisdiction pursuant to CWA Section 401 and the California Porter-Cologne Water Quality Control Act, and CDFW jurisdiction pursuant to Section 1600 *et seq*. of the California Fish and Game Code (CFG Code). Areas generally characterized by depressions, drainage features, and areas supporting riparian or wetland vegetation were evaluated.

Mr. Hogenauer completed an initial preliminary aquatic resources delineation concurrent with the general biological survey on March 17, 2023, with additional details collected on March 27, 2023. The preliminary delineation focused on assessing signs of an ordinary high-water mark (OHWM) and other hydrology indicators, riparian and wetland vegetation, surface soils, topography, and other data. Limits of riparian vegetation and drainages were mapped using a Global Positioning System (GPS) device with sub-meter accuracy.

Mr. Hogenauer conducted the formal jurisdictional delineation on May 16, 2023, including collecting data for the OHWM, collecting sample point data, and reassessing data previously collected during the preliminary delineation. Plants were identified according to Baldwin et al. (2012). Wetland affiliations of plant species follow the 2020 National Wetland Plant List, which became effective in November 2021 (USACE 2021). Soil descriptions, soil surveys, and hydric soil information were based on the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey and National List of Hydric Soils (USDA 2019).

Waters of the U.S. (USACE Jurisdiction)

The limits of potential jurisdiction by USACE (i.e., wetland and non-wetland waters of the U.S. were delineated as follows. Wetland waters of the U.S. boundaries were delineated using the three criteria (i.e., vegetation, hydrology, and soils) established for wetland delineations as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Arid West Supplement (USACE 2008a); USACE wetland boundaries would be identified where all three criteria were observed.

Jurisdictional limits for non-wetland waters of the U.S. areas were defined by the Ordinary High Water Mark (OHWM), if present, which is defined in 33 Code of Federal Regulations Section 329.11 as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas." The USACE has issued further guidance on the OHWM (USACE 2008b; Riley 2005), which was also used for the delineation. If present, the OHWM widths were measured to the nearest foot at various locations along the non-wetland water stream features. All features exhibiting an OHWM were included in the delineation as aquatic resources. Because the OHWM is often not evident for lakes, the lake water level elevation was used to represent the limit of potential USACE jurisdiction, which was provided to HELIX by EVMWD personnel.

As a result of the Supreme Court's May 25, 2023 decision in *Sackett v. Environmental Protection Agency*, the USACE is now interpreting waters of the U.S. consistent with the Supreme Court's decision, which ruled that the federal Clean Water Act extends to only those "*wetlands with a continuous surface connection to bodies that are 'waters of the United States' in their own right," so that they are "indistinguishable" from those waters*. HELIX's delineation is consistent with this latest ruling.

Waters of the State (RWQCB Jurisdiction)

The State Water Resources Control Board's (SWRCB's) State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), adopted on April 2, 2019, and updated April 6, 2021 (SWRCB 2021), was used to identify potential RWQCB wetland waters of the State within the Study Area. All waters of the U.S. were considered waters of the state subject to RWQCB jurisdiction pursuant to CWA Section 401. Features that support aquatic resources (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology), but are isolated (i.e., lack downstream connectivity to traditional navigable waters of the U.S.), would be determined potentially subject to regulation pursuant to the State Porter-Cologne Water Quality Control Act (Porter-Cologne) and identified as potential RWQCB-jurisdictional waters of the State. If present, the boundaries of waters of the State were delineated at the top of bank.

Streambed and Riparian Habitat (CDFW Jurisdiction)

Potential CDFW jurisdictional streambed, lake, and riparian habitat were determined by HELIX based on the regular surface flow within a definable bed and bank, lake water levels, and associated riparian vegetation. CDFW does not have a specific definition of what constitutes a stream as it relates to regulation under Sections 1600-1603 of the CFGC. In practice, CDFW defines a stream channel as that area where water uniformly or habitually flows over a given course, and where the width of the water course can reasonably be identified by physical or biological indicators such as a bed and bank. CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW jurisdictional boundaries were determined based on the presence of riparian vegetation or evidence of regular surface flow. Delineation of CDFW streambed width followed the delineation of non-wetland waters of the State, which was measured to the top of bank. Riparian habitat extending outside the limits of stream channels or lakes was delineated as CDFW jurisdiction to the outermost edge. The potential CDFW limits of jurisdiction over the lake were determined by the lake water levels, which were provided to HELIX by EVMWD personnel.

Rare Plant Survey

Based on the literature review and project study area conditions, Mr. Hogenauer conducted focused surveys for rare plants on March 27 and May 16, 2023. These surveys were timed to target appropriate flowering periods and to maximize the detection of those rare plant species with the potential to occur in the project Study Area. The surveys were conducted on foot by walking meandering transects to provide 100 percent survey coverage of the Study Area. Plant species were identified according to Baldwin et al. (2012).

Coastal California Gnatcatcher

HELIX conducted focused surveys for the coastal California gnatcatcher (*Polioptila californica californica*) within the Study Area in 2023 in accordance with the Coastal California Gnatcatcher Presence/Absence Survey Protocol (USFWS 1997). The survey consisted of six site visits, which began on May 26, 2023, and concluded on June 30, 2023. The survey visits were conducted during appropriate weather conditions and time of day for detecting coastal California gnatcatcher.

The surveys focused on potential coastal California gnatcatcher habitat in the Study Area (i.e., Riversidian sage scrub and Encelia scrub, including disturbed forms). The survey was conducted by walking through and along the perimeter of vegetation, and birds were viewed with the aid of binoculars, where necessary. If coastal California gnatcatcher was not detected passively, a digital coastal California gnatcatcher call prompt was briefly played. Any coastal California gnatcatcher locations were directly mapped on an aerial photograph map in the field.

Burrowing Owl Assessment

Mr. Hogenauer conducted a habitat assessment for burrowing owl (*Athene cunicularia*) on March 17, 2023, along with the general biological assessment. The habitat assessment was conducted throughout the Study Area and performed according to the CDFW Staff Report on Burrowing Owl Mitigation (CDFW

2012). Additionally, a search for burrows potentially suitable for use by burrowing owl was conducted concurrently with the rare plant surveys on March 27 and May 16, 2023.

Survey Limitations

The lists of species identified are not necessarily comprehensive accounts of all species that occur on the site, as species that are nocturnal, secretive, or seasonally restricted may not have been observed. However, those species that are of special status and have the potential to occur on the project site are still addressed in this report. Based on the findings from the desktop literature review and field surveys, nocturnal survey efforts were deemed not necessary and, thus, not conducted.

Nomenclature

Nomenclature for this report follows Baldwin et al. (2012) for plants, Oberbauer (2008) for vegetation communities, North American Butterfly Association (2017) for butterflies, Center for North American Herpetology (Taggart 2023) for reptiles and amphibians, American Ornithological Society (2022) for birds, and Bradley et al. (2017) for mammals. Sensitive plant and animal status are from the CDFW's CNDDB (2023a, c). Soils information is from the USDA NRCS online web soil survey (USDA 2019).

ENVIRONMENTAL SETTING – EXISTING CONDITIONS

Regional Context

The project is located within the boundaries of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP; Dudek and Associates [Dudek] 2003). Specifically, the project is within the Sedco Hill subunit of the Elsinore Area of the MSHCP, within Criteria Cells 4553 and 4556 (Figure 6, *MSHCP Cells*). These MSHCP designations are for informational regional context purposes only. Because the EVMWD is not a signatory (i.e., enrolled entity) to the MSHCP, requirements prescribed by the MSHCP are not applicable to the project. The project site is incorporated within the boundaries of lands under the primary jurisdiction of the EVMWD, which is the Lead Agency reviewing the project for approval.

General Land Use

The Study Area comprises a mix of development from the existing CLWTP as well as undeveloped land supporting native and non-native vegetation. The majority of the Study Area is developed or disturbed. The undeveloped areas within the Study Area mostly consist of sage scrub vegetation, classified as Encelia scrub or Riversidian sage scrub (Figure 5). To the north of the Study Area is the open water of Canyon Lake, including the Canyon Lake dam and spillway. To the east and southeast is undeveloped land and the upper reach of the San Jacinto River that connects Canyon Lake to Lake Elsinore. To the south and west is a thin strip of undeveloped land, with residential homes located further south and west.

Topography and Soils

The Study Area consists of rolling terrain with gentle to moderate slopes throughout, with an elevation of approximately 1,526 feet above mean sea level (AMSL) in the northwest at the facility driveway entrance to 1,382 AMSL at the water level of Canyon Lake. According to the USDA web soil survey, the Study Area is mapped as Lodo rocky loam, 25 to 50 percent slopes, eroded, along with open water (Figure 7, *Soils*). The Lodo soils are classified as having high runoff and are somewhat excessively drained and derived from metamorphosed residuum weathered from sandstone (USDA 2019). Most of the surface soils within the Study Area are very rocky and appear to be rockier (gravel and cobble) than soil.

Vegetation Communities

Six general vegetation communities and land cover types occur on the project site: sage scrub (i.e., Riversidian sage scrub and Encelia scrub), including disturbed forms; southern willow scrub; herbaceous wetland; open water; disturbed habitat; and developed land (Figure 5*;* Table 2*, Existing Vegetation Habitat and Land Uses in the Study Area*). Developed land comprises the existing water treatment plant, associated roads, and infrastructure and is the dominant land use in the Study Area.

Table 2
EXISTING VEGETATION COMMUNITIES AND LAND USES IN THE STUDY AREA

Vegetation Community or Land Cover Type[1]	Acres[2]
Riversidian sage scrub	2.24
Riversidian sage scrub-disturbed	1.45
Encelia scrub	1.15
Encelia scrub-disturbed	0.54
Southern willow scrub	0.03
Herbaceous wetland	0.02
Open water	0.67
Disturbed Habitat	1.24
Developed Land	8.05
Total	**15.39**

[1] Vegetation classifications are from Holland (1986) and Oberbauer (2008).
[2] Acreages rounded to the nearest 0.01 acre.

Sage Scrub – Riversidian Sage Scrub and Encelia Scrub

The Study area supports two types of sage scrub. One is Riversidian sage scrub, which is a 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 buckwheat (*Eriogonum fasciculatum)*, brittlebush (*Encelia farinosa*), California sagebrush (*Artemisia californica*), and may also include foxtail chess (*Bromus madritensis* ssp. *Rubens*). Riversidian sage scrub within the Study Area comprises co-dominant California buckwheat, California sagebrush, and brittlebush, and also includes small amounts of foxtail chess, red stem filaree (*Erodium cicutarium*), short-podded mustard (*Hirschfeldia incana*), and a variety of annual herbs and forbs. Disturbed areas of Riversidian sage scrub in the Study Area have a 20 percent or higher cover from non-native species such

as red stem filaree, tocalote (*Centaurea melitensis*), short-podded mustard, and other non-native annuals.

The second type of sage scrub is Encelia scrub. Although classified under Sonoran desert scrub (Oberbauer 2008), the Encelia scrub within the Study Area functions similarly to Riversidian sage scrub as a xeric expression of sage scrub. Within the Study Area, this habitat differs from Riversidian sage scrub in that it is dominated by brittlebush and has little to no relative cover from other shrubs such as California buckwheat and California sagebrush. Disturbed areas of Encelia scrub have a relatively high (at least 20 percent) cover from non-native species such as red stem filaree, tocalote, short-podded mustard, and other non-native annuals.

Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows (*Salix* sp.) in association with mule fat (*Baccharis salicifolia*), 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. Frequent flooding maintains this early seral community, preventing succession to a riparian woodland or forest (Holland 1986). In the absence of periodic flooding, this early seral type would be succeeded by southern cottonwood or western sycamore riparian forest. In the Study Area, this habitat consists of a small open stand along the lake shoreline comprising Gooding's willow (*Salix gooddingii)*, Fremont cottonwood, tamarisk (*Tamarix parviflora*), mule fat, and a variety of native and non-native annuals.

Herbaceous Wetland

Herbaceous wetland is a low-growing, herbaceous community that is dominated by a variety of native wetland species. It typically occurs in seasonally wet areas with heavy soils. Dominant species usually include wrinkled rush (*Juncus rugulosus*), toad rush (*Juncus bufonius*), and wetland grasses. In the Study Area, this habitat is dominated by non-native species, including umbrella plant (*Cyperus involucratus*), false Spanish fleabane (*Pulicaria paludosa*), floating water primrose (*Ludwigia peploides*), coyote brush (*Baccharis pilularis*), short-podded mustard, and several other annuals in small amounts. A few common native species observed in this habitat include cocklebur (*Xanthium strumarium*) and western ragweed (*Ambrosia psilostachya*).

Open Water

Open water habitat comprises areas of open water that lack surface vegetation. This habitat can be naturally occurring or artificial in origin. Open water is often bordered by varieties of riparian vegetation. Within the Study Area, the open water is Canyon Lake, which has a shoreline comprising a mix of areas without vegetation and areas of southern willow scrub (described above).

Disturbed Habitat

Disturbed habitat 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, which 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, this habitat occurs as areas void of vegetation or dominated by non-native vegetation mostly short-podded mustard and red-stem filaree.

Developed Land

Developed Land includes land that has been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that often require irrigation. Areas where no natural land is evident due to debris or other materials being placed upon it may also be considered developed. Within the Study Area, developed land is dominated by the existing CLWTP and associated infrastructure.

Plants

HELIX detected a total of 43 plant species in the Study Area during project surveys conducted in 2023, of which 16 (37 percent) are non-native species (Attachment A).

Animals

HELIX detected a total of 22 animal species in the Study Area during the biological surveys for the project in 2023 to date. These species consisted of three invertebrates, two reptiles, 16 birds, and one mammal species (Attachment B).

Sensitive Biological Resources

Sensitive Natural Communities

Sensitive natural communities include land that supports unique vegetation communities or the habitats of rare, threatened, or endangered species or subspecies of animals or plants as defined by Section 15380 of the CEQA Guidelines. Developed or disturbed land does not meet the definition of sensitive. According to CDFW, plant communities, alliances, and associations with a statewide ranking of S1 through S3 are considered sensitive natural communities. The list of California Sensitive Natural Communities (CDFW 2022) uses the Alliance and Association names for plant communities from the Manual of California Vegetation (MCV; CNPS 2023b). For assessment purposes, the vegetation communities are translated from Holland and Oberbauer classifications to MCV for determining sensitivity (Table 3, *Vegetation Community Sensitivity Rating*).

Table 3
VEGETATION COMMUNITY SENSITIVITY RATING

MCV Alliance[1]	Holland and Oberbauer Classification[2]	Sensitive Ranking[3]
California Buckwheat Scrub (including disturbed)	Riversidian Sage Scrub	G5/S5
Brittlebush Scrub (including disturbed)	Encelia Scrub	G5/S4

MCV Alliance[1]	Holland and Oberbauer Classification[2]	Sensitive Ranking[3]
Arroyo Willow thickets	Southern Willow Scrub	G4/S4
Cocklebur patches	Herbaceous Wetland	G5/S4
Open Water	Open Water	none
Disturbed Habitat	Disturbed Habitat	none
Developed Land	Developed Land	none

[1] Alliance from best matching habitat in the Manual of California Vegetation.
[2] Vegetation classifications are from Holland (1986) and Oberbauer (2008).
[3] Ranking G=federal and S=State of California.

Based on global and state ranking, no sensitive natural communities occur in the Study Area. However, because the Riversidian sage scrub and Encelia scrub were found to support the federally-threatened coastal California gnatcatcher, these communities are considered sensitive natural communities under CEQA. Additionally, as wetland and riparian habitats, southern willow scrub and herbaceous wetland are considered sensitive and potentially jurisdictional.

Special-Status Plant and Animal Species

Special-Status Plant Species

Special-status plant species are those listed as federally threatened or endangered by the USFWS; State listed as threatened or endangered or considered sensitive by the CDFW; or recognized in the CNPS Inventory of Rare and Endangered Vascular Plants of California.

No special-status plant species have been recorded within the Study Area. Furthermore, based on the field surveys, including focused rare plant surveys, no special-status plant species were observed in the Study Area by HELIX in 2023.

Given the literature review and database query results, a total of 25 special-status plant species were evaluated for their potential to occur in the Study Area and are presented in Attachment D. Of these 25 species evaluated, seven species are listed on a state or federal level; however, none are considered to have potential to occur in the Study Area. Of the 25 plant species evaluated, nine species are considered to have low potential to occur, and the remaining sixteen species were determined not likely to occur.

Special-Status Animal Species

Special-status animal species are those listed as threatened or endangered, proposed for listing, or candidates for listing by the USFWS, or considered sensitive animals by the CDFW.

Four special-status animal species (i.e., three birds and one reptile) were detected in the Study Area during the biological surveys and focused surveys conducted by HELIX in 2023 for the project, the federally listed threatened coastal California gnatcatcher; Bell's sage sparrow (*Artemisiospiza belli belli*), which is a federal bird of conservation concern and state watch list species; the Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), which is a state watch list species; and orange-throated whiptail (*Aspidoscelis hyperythra*), which is a state watch list species.

All four of these species were observed within the Riversidian sage scrub and Encelia scrub habitats within the Study Area (Figure 5). A focused survey report for coastal California gnatcatcher was prepared by HELIX, which is attached to this report as Attachment E. No other special-status animal species were observed by HELIX in 2023 or have been recorded by others within the Study Area.

Based on the literature review and database query results, a total of 33 special-status animal species were evaluated for their potential to occur in the Study Area and are listed in Attachment F. Eight of these species are listed at the state or federal level of which, all but one (coastal California gnatcatcher, observed on-site) were determined to have low to no potential to occur in the Study Area due to a lack of appropriate habitat. Of the 33 sensitive animal species evaluated and, not including the four sensitive species detected, one species was considered to have moderate potential to occur: Coastal whiptail (*Aspidoscelis tigris stejnegeri*), which is a state species of special concern. The remainder of the special-status animal species evaluated were determined to have low or no potential to occur in the Study Area due to the lack of suitable habitat.

Burrowing Owl Assessment

Although the initial habitat assessment conducted by HELIX found that portions of the Study Area supported open habitat with sparse vegetation cover that has the potential to be suitable for use by burrowing owls, suitable burrows were not detected within the Study Area. The rocky soils present in the Study Area do not appear to be suitable for burrowing, as burrows for small mammals were not observed. The Study Area was determined to not have suitable habitat for burrowing owl based on the lack of burrows and the unsuitability of the soils, along with portions of the Study Area being developed or having a shrub cover of a density higher than preferred by burrowing owls.

Nesting Birds and Raptors

The Study Area includes areas of shrub vegetation, native trees, and ornamental trees that could be suitable nesting habitat (e.g., trees, shrubs, structures) for several common bird species, including raptors protected under the MBTA and CFG Code.

Jurisdictional Wetlands and Waters

The Study Area is nearly entirely characterized by uplands. However, based on the findings from the jurisdictional delineation, the portion of the project at the lake shore includes southern willow scrub, herbaceous wetland, and open water, which are considered potentially jurisdictional aquatic resources. Two non-jurisdictional features were also observed in the Study Area, consisting of an ephemeral pool and a swale. These two features are described below, and the potential jurisdictional resources are discussed subsequently according to agency jurisdiction.

The ephemeral pool occurs in a disturbed area of the CLWTP on hardpan compacted soil that is devoid of vegetation. This area is adjacent to and affiliated with an access road of the CLWTP. Water runoff from the access road and direct rainfall collects and pools at the southern side of the disturbed area adjacent to a constructed small earthen berm. Based on field surveys in 2023, during an above-average rainfall year, the pooling is present during and immediately after rainfall, but subsides relatively quickly (less than two weeks). This feature lacks an upstream or downstream connection to other resources and

is unvegetated. This ephemeral pool is essentially a depression in the disturbed hard pan and is not considered a jurisdictional aquatic feature that would be regulated by CDFW, RWQCB, or USACE.

The swale feature identified on-site lacks bed and bank, lacks an OHWM, and consists of a linear patch of flat concrete on the upper portion of the slope and small rip rap (estimated to be three inches minus, gravel) on the lower portion of the slope. In the middle, this feature connects to a storm drain system that also collects runoff from the CLWTP roads and leads to an outfall into the lake. Because the swale consists of human-made material and lacks either an OHWM or bed and bank, it is considered not to be jurisdictional to the CDFW, RWQCB, or USACE. The culvert associated with the swale is also not considered a jurisdictional feature.

Wetland and Non-Wetland Waters of the U.S. – USACE Jurisdiction

Potential waters of the U.S. identified within the project site include areas mapped as southern willow scrub, herbaceous wetland, and open water. The southern willow scrub and herbaceous wetland consist of a narrow band of vegetation along the bank of the lake or in the shallow water adjacent to the bank. The open water consists of a small portion of Canyon Lake and occurs in the northern portion of the Study Area. The open water was delineated based on the presence of surface water and a lack of visible (above water) vegetation. Areas of surface water with visible emergent vegetation were mapped per the vegetation community present. An OHWM along the lake edge was not apparent in the field. Based on a review of available USACE literature and per verbal communication with USACE staff during the preparation of this report, it was determined that Canyon Lake does not have a standard water elevation line that represents the OHWM. Thus, for purposes of delineating potential limits of waters of the U.S. under USACE jurisdiction, the elevation of the water levels of the lake on the day of the surveys were considered to represent the OHWM, which was provided to HELIX by EVMWD personnel. According to field communication with EVMWD personnel and field observation, the water levels during the surveys were at an elevation of approximately 1,382 feet AMSL, which was slightly lower than the dam spillway. The portion of habitats below the OHWM is considered jurisdictional non-wetland waters of the U.S. subject to regulation by USACE. The Study Area does not contain wetland waters of the U.S.

Wetland and Non-Wetland Waters of the State – RWQCB Jurisdiction

The waters of the U.S. discussed above also represent waters of the State subject to RWQCB jurisdiction pursuant to Section 401 of the CWA. Additionally, the portion of the southern willow scrub and herbaceous wetland vegetation occurring within the lake bank above the ordinary OHMW was considered wetland waters of the State subject to RWQCB jurisdiction.

Streambed, Lake, and Riparian Habitat – CDFW Jurisdiction

Potential resources subject to the jurisdiction of CDFW within the Study Area are consistent with the waters of the U.S./State discussed above. A summary of the jurisdictional aquatic resources and their corresponding acreages is provided below in Table 4, *Potentially Jurisdictional Aquatic Resources*, which are also presented on Figures 8 through 10, *CDFW Jurisdiction, RWQCB Jurisdiction, and USACE Jurisdiction*, respectively.

Table 4
POTENTIALLY JURISDICTIONAL AQUATIC RESOURCES[1]

Jurisdictional Areas	Acres in Study Area[2]
U.S. Army Corps of Engineers (USACE)	
Non-wetland Waters of the U.S.: Southern willow scrub	0.01
Non-wetland Waters of the U.S.: Herbaceous wetland	0.01
Non-wetland Waters of the U.S.: Open water	0.67
USACE TOTAL	**0.69**
Regional Water Quality Control Board (RWQCB)	
Non-wetland Waters of the U.S./State: Southern willow scrub	0.01
Non-wetland Waters of the U.S./State: Herbaceous wetland	0.01
Non-wetland Waters of the U.S./State: Open water	0.67
Wetland Waters of the State Only: Southern willow scrub	0.02
Wetland Waters of the State Only: Herbaceous wetland	0.01
RWQCB TOTAL	**0.72**
California Department of Fish and Wildlife (CDFW)	
CDFW Riparian: Southern willow scrub	0.03
CDFW Riparian: Herbaceous wetland	0.02
CDFW Lake: Open water	0.67
CDFW TOTAL	**0.72**

[1] Acreage rounded to the nearest 0.01.
[2] Totals are presented independent as applicable to each Agency, totals are not cumulative (i.e., no grand total).

Wildlife Corridors and Linkages

Wildlife corridors connect isolated habitats and allow the movement or dispersal of plant materials and animals. Local wildlife corridors allow access to resources such as food, water, and shelter within the framework of the wildlife's daily routine and life history. For example, animals can use these corridors to travel between their riparian breeding habitats and upland burrowing habitats. Regional corridors provide these functions over a larger scale and link two or more large habitat areas, allowing the dispersal of organisms and the consequent mixing of genes between populations. A corridor is a specific route that is used for the movement and migration of species; it may be different from a linkage in that it represents a smaller or narrower avenue for movement. A linkage is an area of land that supports or contributes to the long-term movement of animals and genetic exchange by providing a live-in habitat that connects to other habitat areas. Many linkages occur as stepping-stone linkages that are made up of a fragmented archipelago arrangement of habitat over a linear distance.

Canyon Lake could be considered a habitat that serves as a linkage to support wildlife (primarily waterfowl) movement in the region. However, the project Study Area itself and the lands surrounding the project are mostly constrained by existing residential development. The Study Area itself is largely characterized by the existing CLWTP and does not serve as or contribute to any known or potential corridors or linkages. Therefore, the project Study Area is not considered to substantially facilitate wildlife movement.

APPLICABLE REGULATIONS

Based on the findings of this report, activities affecting the biological resources determined to exist or have the potential to exist within the project site could be subject to federal, state, and local regulations. The project proponent is the EVMWD, which is seeking financing from the SWRCB Drinking Water State Revolving Fund (DWSRF) Program for the Project. Because the DWSRF Program is partially funded by the U.S. Environmental Protection Agency, the Project requires compliance not only with the CEQA, but also with NEPA. As such, the biological resources analysis in this report provides an analysis of the project's conformance with federal regulations intended to protect biological resources. The regulatory requirements relevant to the project are discussed below.

Federal

Federal Endangered Species Act

The Federal Endangered Species Act (ESA) (16 United States Code [USC] 1531 *et seq.*) extends legal protection to plants and animals listed as endangered or threatened by the USFWS and gives authorization to the USFWS to review proposed federal actions to assess potential impacts to species listed as endangered or threatened. The ESA generally prohibits the unauthorized "taking" of a federally listed species and adverse modification of designated critical habitat.

"Taking" of a threatened or endangered species is deemed to occur when an intentional or negligent act or omission results in any of the following actions: "to harass, harm, pursue, hunt, shoot, kill, trap, capture, or collect, or attempt to engage in any such conduct." Such acts may include significant habitat modification or degradation, if it results in death or injury. Likewise, import, export, interstate, and foreign commerce of listed species are all prohibited. Sections 7 and 10 of the ESA permit "incidental take" of a listed species via a federal or private action, respectively, through formal consultation with the USFWS. Because the project would entail funding from the SWRCB DWSRF, a Section 7 Consultation with the USFWS would be necessary as part of the permitting approvals for the project: specifically, permitting (i.e., Clean Water Act and Rivers and Harbors Act) with the USACE, which is discussed further below.

Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the federal MBTA, as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is used to place restrictions on the disturbance of active bird nests during the nesting season (generally January 15 to September 15, including raptors). In addition, the USFWS commonly places restrictions on disturbances allowed near active raptor nests. The project would be required to adhere to the protection of nesting birds in accordance with the MBTA.

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 (RHA) 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 (33 USC 1344). Most development projects are permitted using Individual Permit or Nationwide Permit instruments. Due to the project activities proposed within potentially jurisdictional aquatic resources, a permit would be required from the USACE for compliance with the CWA and RHA.

State

California Environmental Quality Act

Primary environmental legislation in California is found in the CEQA and its implementing guidelines (State CEQA Guidelines), requiring that projects with potential adverse effects or impacts on the environment undergo environmental review. Adverse impacts to the environment are typically mitigated as a result of the environmental review process in accordance with laws and regulations.

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in ESA and the section of the CFG Code dealing with rare or endangered plants and animals. CEQA Guideline Section 15380(d) allows a public agency to undertake a review to determine whether a significant effect would occur on species that have not yet been listed by either the USFWS or CDFW (i.e., species of concern). Thus, if warranted under special circumstances, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as formally protected.

Pursuant to the requirements of CEQA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such species.

California Fish and Game Code

The CFG Code prohibits the unauthorized taking of birds, mammals, fish, amphibians, and reptiles (CFG Code 2050 *et seq*.). Sections 1600 et seq. of the CFG Code include definitions and provisions for the protection of lake and streambed resources. The CDFW requires notification through a Lake and Streambed Alteration (LSA) Agreement for any activity that could result in an alteration of lake or streambed resources. 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 the code or any regulation made pursuant thereto. Raptors (birds of prey) 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. In common practice, CDFW places timing restrictions on the clearing of potential nesting habitat (e.g., vegetation), as well as restrictions on disturbances allowed near active raptor nests. Due to the project activities

proposed within Canyon Lake, an LSA Agreement would be required from the CDFW. Additionally, the project would be required to adhere to the protection of nesting birds in accordance with the CFG Code.

PROJECT IMPACTS, CRITERIA FOR DETERMINING SIGNIFICANCE, AND PROPOSED MITIGATION

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. 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 longer to become apparent.

The significance of impacts to the biological resources present, or with the potential to occur on the project site, was determined based on the sensitivity of the resource and the extent of the anticipated impact. Any impact to highly sensitive resources, such as a federally listed species, would be considered significant. Conversely, other resources that are of low sensitivity (e.g., species with a large, locally stable population in the region but declining elsewhere) can sustain some impact with a less than significant effect. Mitigation, monitoring, and reporting requirements to eliminate or reduce project impacts to a less than significant level are also provided in this section.

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 the CDFW or USFWS. (Issue 1)

(b) Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS. (Issue 2)

(c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (Issue 3)

(d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with an established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Issue 4)

(e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Issue 5)

(f) Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. (Issue 6)

Issue 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?

Issue 1 Impact Analysis

Less than Significant Impact with Mitigation. Based on the results of the field surveys, including focused surveys, no rare plants occur in the Study Area, and none would be impacted by the project.

The project would result in impacts to vegetation considered occupied habitat by the federally listed threatened coastal California gnatcatcher. Additionally, this habitat also supports Bell's sage sparrow, which is a federal bird of conservation concern and state watch list species; the Southern California rufous-crowned sparrow, which is a state watch list species; and orange-throated whiptail, which is a state watch list species. Approximately 0.70 acre of this habitat (i.e., Encelia scrub and Riversidian sage scrub, including disturbed forms) would be permanently impacted by construction, and approximately 0.06 acre of such habitat would be temporarily impacted by the use of the laydown areas (Figure 11, *Vegetation and Land Uses Impacts*). Permanent impacts to this habitat by construction would be considered significant, whereas the temporary impacts to vegetation from the use of a laydown staging area would be replanted to reflect the pre-project habitat or better. Potential direct and indirect impacts to coastal California gnatcatcher, Bell's sage sparrow, and Southern California rufous-crowned sparrow nesting could occur if proposed project activities are implemented during the breeding season. In addition to these three species, the project proposes the removal of vegetation which could provide suitable nesting habitat for other birds and raptors protected under the MBTA and CFG Code. Impacts on active nests belonging to bird species protected under the MBTA and CFG Code would be significant. These potential impacts to coastal California gnatcatcher, and other birds and raptors are described in further detail below.

Coastal California Gnatcatcher

Coastal California gnatcatcher "tends to occur most frequently within the California sagebrush-dominated stands" of sage scrub (Dudek 2004). Encelia scrub and Riversidian sage scrub (including disturbed forms) occur in several patches within the Study Area. These patches are co-dominated by California buckwheat, California sagebrush, and brittlebush and are mostly continuous with similar habitats that occur south, west, and north of the Study Area. Throughout the field surveys of the Study Area conducted by HELIX in 2023, including focused surveys for the species, coastal California gnatcatcher was observed utilizing this habitat in the north, northwest, and southeast portions of the WTP along with being observed in the off-site habitats within the Study Area further northwest, west, south, and southeast (see Attachment E of this report).

Proposed direct permanent impacts (vegetation removal) to approximately 0.70 acre of coastal California gnatcatcher habitat would be considered significant under CEQA. Impacts to coastal California gnatcatcher individuals are not expected due to the mobility of the species and ability to move (i.e., fly) away from the construction activities. If proposed project activities are scheduled to occur during the breeding season for coastal California gnatcatcher (i.e., February 15 to August 30), such activities could

result in inadvertent and adverse direct and indirect impacts to nesting by vegetation and/or nest removal and construction-generated noise, respectively. Implementation of mitigation measures **Bio-1** and **Bio-2** along with a USFWS ESA Section 7 consultation would reduce potential impacts to coastal California gnatcatcher to less than significant.

Orange-Throated Whiptail

Orange-throated whiptail lizard was observed in sage scrub habitat within the Study Area during surveys conducted by HELIX in 2023. The project avoids the majority of this habitat but would impact the edge portion of this habitat on-site within the WTP. Because orange-throated whiptail lizard is a State Watch List Species, project impacts would be potentially considered significant. Potential project impacts to this species are expected to be a result of habitat impacts; individual whiptail lizards are not expected to be impacted due to their high mobility and ability to disperse into the adjacent habitat. Orange-throated whiptail lizard is relatively widespread throughout the County and region and project impacts to their habitat and possibly one individual or two (although not anticipated) would not likely jeopardize the status of the species in the region and would not directly contribute to the future elevated listing of the species. Habitat creation, restoration/enhancement, and other habitat-based mitigation would result in no-net loss of habitat for this species. Therefore, the proposed impacts to orange-throated whiptail lizard are considered less than significant.

Bell's Sage Sparrow

Bell's sage sparrow was observed in sage scrub habitat within the Study Area during surveys conducted by HELIX in 2023. The project would impact portions of this habitat on-site within the WTP. The project avoids the majority of this habitat on-site but would impact the edges of this habitat. Because Bell's sage sparrow is a State Watch List Species and federal bird of conservation concern, project impacts would be potentially considered significant. Potential project impacts to this species are expected to be a result of habitat impacts; individual sparrows are not expected to be impacted due to their high mobility and ability to disperse into the adjacent habitat. Bell's sage sparrow is relatively widespread throughout the County and region, and project impacts to their habitat and possibly one individual or two (although not anticipated) would not likely jeopardize the status of the species in the region and would not directly contribute to the future elevated listing of the species. Habitat creation, restoration/enhancement, and other habitat-based mitigation would result in no-net loss of habitat for this species. Project compliance with the MBTA would avoid direct or indirect impacts to the nesting of this species. Therefore, the proposed impacts to Bell's sage sparrow are considered less than significant.

Southern California Rufous-Crowned Sparrow

Southern California rufous-crowned sparrow was observed in sage scrub habitat within the Study Area during surveys conducted by HELIX in 2023. The project avoids the majority of this habitat on-site but would impact the edges of this habitat within the WTP. Because Southern California rufous-crowned sparrow is a State Watch List Species, project impacts would be potentially considered significant. Potential project impacts to this species are expected to be a result of habitat impacts; individual sparrows are not expected to be impacted due to their high mobility and ability to disperse into the adjacent habitat. Southern California rufous-crowned sparrow is relatively widespread throughout the County and region and project impacts to their habitat and possibly one individual or two (although not

anticipated) would not likely jeopardize the status of the species in the region and would not directly contribute to the future elevated listing of the species. Habitat creation, restoration/enhancement, and other habitat-based mitigation would result in no-net loss of habitat for this species. Project compliance with the MBTA would avoid direct or indirect impacts to the nesting of this species. Therefore, the proposed impacts to Southern California rufous-crowned sparrow are considered less than significant.

Nesting Birds

The project Study Area contains trees, shrubs, and other vegetation that provide suitable nesting habitat for common birds, including raptors, protected under the MBTA and the CFG Code. The proposed project includes vegetation clearing, which could result in direct impacts to nesting birds if the removal or trimming of vegetation occurs during the bird nesting season (generally January 15 to September 15, including raptors). Such impacts to nesting birds would be in violation of the MBTA and the CFG Code and would be significant. Indirect effects could occur as a result of construction noise in the immediate vicinity of undeveloped areas supporting an active bird nest, such that the disturbance results in nest abandonment or nest failure. Impacts to nesting birds would be considered significant. Implementation of mitigation measure **Bio-3** would reduce potentially significant impacts on nesting birds and raptors to less than significant.

Issue 1 Mitigation Measures

Bio-1 **Coastal California Gnatcatcher Habitat Replacement**. Before the issuance of any construction permit for the project, EVMWD shall mitigate impacts to 0.70 acre of sage scrub (i.e., Encelia scrub and Riversidian sage scrub, including disturbed) at a 1:1 ratio. Total compensation for impacts to coastal sage scrub shall be 0.70 acre, provided on- and/or off-site via habitat creation, preservation, and/or purchase of appropriate habitat credits (including Encelia scrub and/or Riversidian sage scrub) from an off-site Mitigation Bank approved by the EVMWD and USFWS.

Bio-2 **Avoidance of Coastal California Gnatcatcher**. Prior to any disturbance, clearing, or grubbing of coastal California gnatcatcher habitat (i.e., Encelia scrub and Riversidian sage scrub, including disturbed forms), EVMWD shall complete consultation with the USFWS in accordance with Section 7 of the FESA. Implementation of measures imposed as a result of the consultation with USFWS shall be required. Unless otherwise required by the USFWS, impacts to coastal California gnatcatcher shall be provided by habitat-based compensation on-site or off-site through the purchase of conservation Mitigation Bank credits as stipulated in Bio-1 above.

No clearing of Riversidian sage scrub or Encelia scrub vegetation shall occur during the coastal California gnatcatcher breeding season, between February 15 to August 30. If construction activities are scheduled to occur during the nesting season for coastal California gnatcatcher (February 15 to August 30), EVMWD or its contractor for the project shall retain a qualified biologist to conduct a pre-construction survey for coastal California gnatcatcher shall be conducted before project implementation. The survey shall be conducted by a USFWS-permitted biologist for coastal California gnatcatcher and include surveying appropriate habitats with the proposed work areas and surrounding 500-foot

buffer, to the extent feasible. The biologist shall be retained by EVMWD or its contractor for the project. A minimum of three focused surveys shall be conducted, on separate days, to determine the presence of coastal California gnatcatcher nesting activities. The surveys shall begin a maximum of seven days before project impacts, with the last survey conducted the day immediately before the commencement of work. If no coastal California gnatcatcher nesting is detected, construction may be initiated. A project biologist, retained by EVMWD or its contractor for the project, shall be present during all clearing of appropriate habitats, as shown in Figure 11 of this report and as outlined in the Final Construction Plan Set. The project biologist shall have the authority to halt work if necessary to protect coastal California gnatcatcher.

If an active coastal California gnatcatcher nest is found during the pre-construction survey, the project biologist will postpone work within 500 feet of the nest and contact EVMWD, its contractor for the Project, and USFWS to discuss the best approach to avoid and/or minimize impacts to nesting coastal California gnatcatcher (such as sounds walls, noise monitoring, no work zones, other work restrictions, etc.) acceptable to USFWS. Following discussion with USFWS, work may be initiated subject to the implementation of the agreed-upon approach.

Bio-3 **Avoidance of Nesting Birds and Raptors.** Project activities requiring the removal and/or trimming of vegetation or demolition of structures suitable for nesting birds shall occur outside of the general bird and raptor breeding season (January 15 to September 15). To prevent impact to an active nest, a biologist retained by EVMWD or its contractor for the project shall conduct a pre-activity nesting bird survey within three days before the activities to confirm the presence or absence of active bird (including raptor) nests. If no active bird or raptor nests are found by the biologist, then the activities shall proceed. If an active bird or raptor nest is found, then vegetation removal and/or trimming activities at the nest location shall not be allowed and no-work buffers shall be implemented as follows: 100 feet around non-listed active passerine (perching birds and songbirds) nests and 500 feet around active raptor nests. The buffers may be reduced, if appropriate, and as directed by the project biologist. The buffers shall be respected and maintained until the end of the breeding season or until the project biologist has determined that the birds have fledged and are no longer reliant upon the nest for survival.

Issue 2: 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?

Issue 2 Impact Analysis

Less than Significant with mitigation. The project would result in direct impacts to vegetation considered sensitive natural communities: approximately 0.70 acre of sage scrub (i.e., Riversidian and Encelia scrub) and approximately 0.01 acre of herbaceous wetland would be permanently impacted. Impacts to these sensitive natural communities (approximately 0.71 acre total) would be considered significant. Additionally, approximately 0.06 acre of disturbed Riversidian sage scrub would be temporarily

impacted by project laydown and staging. No grading would occur in this laydown area. Following construction, this area would be replanted, as necessary, to reflect the pre-project habitat or better. Thus, these temporary impacts from the use of the laydown area are considered de minimis and not significant.

Significant impacts as a result of the project area are presented below (Table 5, *Project Impacts to Riparian Habitat or Sensitive Natural Community*), and their spatial distribution within the Study Area are reflected on Figure 11. These impacts shall be reduced to less than significant by the implementation of mitigation measures **Bio-1** and **Bio-4**.

Table 5
PROJECT IMPACTS TO SENSITIVE NATURAL COMMUNITIES[1]

Vegetation Community or Land Cover Type[2]	Project Impact Acres	Mitigation Ratio	Mitigation Required
Riversidian sage scrub (including disturbed)	0.01	1:1	0.01
Encelia scrub (including disturbed)	0.69	1:1	0.69
Herbaceous wetland	0.01	1:1	0.01
TOTAL	**0.71**	-	**0.71**

[1] Acreages rounded to the nearest 0.01 acre. Impacts are associated with the demolition/removal of existing facilities and the construction of new facilities. Impacts do not include temporary laydown areas. Impacts only reflect sensitive communities. Impacts to non-sensitive areas (i.e., disturbed habitat and developed land) are not included.
[2] Vegetation classifications are from Holland (1986) and Oberbauer (2008).

In addition, potential direct impacts could also occur if construction work inadvertently extends beyond the authorized work limits where impacts to sensitive natural communities are not anticipated. To avoid such impacts on sensitive natural communities located adjacent to the proposed work areas, EVMWD would implement BMPs from the required SWPPP for the project that comply with the Construction General Permit (CGP), which include:

- Covering stockpiled excavated and/or fill materials to reduce potential off-site sediment transport;
- Employing appropriate standard spill prevention practices and clean-up materials;
- Maintaining the project area free of trash and debris;
- Properly storing, handling, and disposing of toxins and pollutants, including waste materials;
- Using erosion control devices, such as straw wattles, mulch, mats, and/or geotextiles;
- Using sediment catchment structures such as hay bales, gravel or sandbags, silt fencing, fiber rolls, matting, berms, or similar devices along grading boundaries and drainage courses to prevent off-site sediment transport;
- Daily backfilling, compaction, and/or covering of excavated trenches to minimize erosion potential; and/or
- Regularly inspecting and maintaining all erosion control and sediment catchment facilities to ensure proper function and effectiveness.

Thus, with the implementation of BMPs and the adherence to the project's SWPPP and CGP, no additional impacts to sensitive natural communities located adjacent to the project would occur.

Issue 2 Mitigation Measures

Bio-4 **Compensatory Mitigation for Impacts to Herbaceous Wetland.** The EVMWD shall compensate for project impacts to herbaceous wetland as follows: mitigation for impacts to 0.01 acre herbaceous wetland shall be provided at a minimum 1:1 ratio consisting of 1:1 establishment/ re-establishment, on-site or off-site preservation, or purchase of appropriate credits (i.e., like-kind habitat or better) from a local mitigation bank. Proposed establishment/re-establishment, on-site or off-site preservation shall be identified and approved by EVMWD before project impacts to herbaceous wetland. If mitigation bank credits are selected, such credits shall be acquired by EVMWD before project impacts to herbaceous wetland. Mitigation shall not occur at levels below the ratios described above unless otherwise conditioned in permits and/or discretionary approvals issued by USACE, RWQCB, and/or CDFW, as applicable.

Issue 3: Jurisdictional Wetlands and Waters

Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the federal Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?

Issue 3 Impact Analysis

Less than Significant Impact with Mitigation. The project would not result in impacts to federally protected wetlands pursuant to Section 404 of the CWA, given that none occur in the Study Area. However, non-wetland waters of the U.S., protected by Section 404 of the CWA and the RHA, would be impacted by the project. Additionally, although not federally protected or regulated by Section 404 of the CWA or RHA, waters of the state considered potentially under the jurisdiction of the RWQCB pursuant to Section 401 of the CWA, as well as protected lake and associated riparian habitat under the jurisdiction of the CDFW per Section 1602 of the CDFW Game Code, occur on-site and would also be impacted. Impacts to jurisdictional aquatic resources are presented below in Table 6, *Impacts to Potentially Jurisdictional Resources*, and are spatially depicted on Figures 12 through 14, *CDFW Jurisdictional Impacts, RWQCB Jurisdictional Impacts, and USACE Jurisdictional Impacts*, respectively. Based on the implementation of BMPs and adherence to the project's SWPPP and CGP, indirect impacts to potentially jurisdictional resources are not expected.

Table 6
IMPACTS TO POTENTIALLY JURISDICTIONAL AQUATIC RESOURCES[1,2]

Jurisdictional Areas	Acres in Study Area	Project Impacts[3]		Net Impacts[4]
		Demolition	Construction	
U.S. Army Corps of Engineers (USACE)				
Non-wetland Waters of the U.S.: Southern willow scrub	0.01	-	-	-
Non-wetland Waters of the U.S.: Herbaceous wetland	0.01	<0.01	<0.01	0

Jurisdictional Areas	Acres in Study Area	Project Impacts[3]		Net Impacts[4]
		Demolition	Construction	
Non-wetland Waters of the U.S.: Open water	0.67	0.02	0.02	0
USACE TOTAL	**0.69**	**0.02**	**0.02**	**0**
Regional Water Quality Control Board (RWQCB)				
Non-wetland Waters of the U.S./State: Southern willow scrub	0.01	-	-	-
Non-wetland Waters of the U.S./State: Herbaceous wetland	0.01	-	0.01	0.01
Non-wetland Waters of the U.S./State: Open water	0.67	0.02	0.02	0
Wetland Waters of the State Only: Southern willow scrub	0.02	-	-	-
Wetland Waters of the State Only: Herbaceous wetland	0.01	<0.01	<0.01	0
RWQCB TOTAL	**0.72**	**0.02**	**0.03**	**0.01**
California Department of Fish and Wildlife (CDFW)				
CDFW Riparian: Southern willow scrub	0.03	-	-	-
CDFW Riparian: Herbaceous wetland	0.02	<0.01	0.01	<0.01
CDFW Lake: Open water	0.67	0.02	0.02	0
CDFW TOTAL	**0.72**	**0.02**	**0.03**	**0.01**

[1] Acreage rounded to the nearest 0.01.
[2] Totals are presented independent as applicable to each Agency, totals are not cumulative (i.e., no grand total).
[3] Impacts from demolition reflect the removal of existing structures; whereas impacts from construction reflect the installation of new structures.
[3] Reflects overall impacts, considering demolition/removal would replace resources; whereas construction would remove resources.

As presented in Table 6 above, the project demolition and construction activities would result in direct impacts to habitat considered to be jurisdictional (i.e., herbaceous wetland and open water). In whole, these impacts consist of approximately 0.02 acre of demolition (i.e., removal of existing WTP structures) and installation of approximately 0.03 acre of new structure (see RWQCB and CDFW totals in Table 6 above). Considering project impacts via demolition/removal would replace resources, whereas construction efforts would remove resources; overall net impacts to jurisdictional resources would be 0.01 acre, which is to CDFW- and RWQCB-jurisdictional herbaceous wetland (see Table 6 above). Net impacts to approximately 0.01 acre of herbaceous wetland would be considered significant. These impacts are associated with the gangway and dock (see Figures 4c, 12, and 13).

Project impacts to open water would be de minimis in nature because the project would result in less structure (i.e., less obstruction) within the open water than in the current condition due to the removal of the intake pumps, barges, floating walkway, old intake structure, and associated pipelines compared to the replacement with a single gangway and barge structure with four submersible intake pipelines. This reduction/loss in the structure would ultimately reduce the obstruction within the open water and result in an overall gain to open water habitat compared to existing conditions. Thus, no mitigation for impacts to open water is proposed, although work in the lake (non-wetland waters of the U.S.) will still trigger coordination and permitting with the USACE. Project compliance with the CWA and CFG Code is also required; thus, EVMWD coordination with USACE, RWQCB, and CDFW would occur before impacts to jurisdictional resources, and corresponding regulatory permitting would be completed if determined required by USACE, RWQCB, and or CDFW.

Issue 3 Mitigation Measures

Implementation of BMPs, compliance with the required SWPPP and CGP for the project, and implementation of mitigation measure **Bio-4** would avoid and minimize project impacts to jurisdictional resources to less than significant. No additional mitigation is required. As stated previously, the project is subject to coordination and/or regulatory permitting with the USACE, RWQCB, and CDFW; any mitigation measures prescribed by these agencies as a result of the permitting process would be required.

Issue 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?

Issue 4 Impact Analysis

Less than Significant Impact. The Study Area does not function as a wildlife corridor, although birds (including migratory species) may use trees and shrubs within the Study Area. Native or migratory fish do not occur in Canyon Lake. Fish species are those stocked for recreational fishing purposes and are not native to the region. Canyon Lake could be considered as habitat that serves as a linkage to support wildlife (primarily waterfowl) movement in the region. However, the project Study Area is developed as a WTP and does not serve as or contribute to any known or potential corridors or linkages. Overall, the project Study Area is not considered to substantially facilitate wildlife movement. Lands surrounding the project are mostly constrained by existing residential development. Potential impacts to wildlife movement and nursery sites would be less than significant. No mitigation is required.

Issue 4 Mitigation Measures

No mitigation is required.

Issue 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?

Issue 5 Impact Analysis

No Impact. The project would not conflict with any local policies or ordinances protecting biological resources. Tree removal, if required, may occur within the ornamental vegetation along the CLWTP entrance that occurs within the limits of the City of Lake Elsinore. Lake Elsinore's tree ordinance does not apply to residential ornamental planted trees, with the potential exception of mature palm trees, which do not occur within the Study Area. The City of Canyon Lake does not have a tree ordinance. The project would not result in the removal of native trees or mature palms. The project would not conflict with any City policies or ordinances, and no impact would occur.

Issue 5 Mitigation Measures

No mitigation is required.

Issue 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?

Issue 6 Impact Analysis

No Impact. The project would occur within the boundaries of the MSHCP, particularly within the Sedco Hills subunit of the Elsinore Area Plan, within MHSCP Criteria Cells 4553 and 4556. However, EVMWD is not an enrolled entity (i.e., non-signatory) of the MSHCP; therefore, the policies and guidelines, as well as the surveys and reporting requirements of the MSHCP, are not applicable to the proposed project. Although conformance with the MSHCP is not required, the information below is provided for general project context with the MSHCP. In conclusion, no conflict would occur.

MSHCP CELL CONSERVATION CRITERIA

The MSHCP Criteria Cells in which the Study Area occurs are expected to contribute to the assembly of Proposed Linkage 8, which follows the San Jacinto River from Canyon Lake (Railroad Canyon Reservoir) to Lake Elsinore. Because the project would not impact the San Jacinto River and project impacts are limited to occur within the existing CLWTP, the project area is not within the targeted conservation area for the criteria cells. The project would not conflict with the conservation goals of the MSHCP.

MSHCP-FOCUSED SPECIES SURVEY REQUIREMENTS

The Study Area is not within the MSHCP Narrow Endemic Plant Species (NEPS) Survey Area or within the MSHCP Criteria Area Species (CAS) Survey Area for sensitive plant species. Nevertheless, focused surveys for rare plants were conducted, and plants designated as protected under the MSHCP do not occur in the Study Area. The Study Area is not within the mammal or amphibian survey areas of the MSHCP. The Study Area is within the MSHCP burrowing owl survey area. The project Study Area was evaluated for burrowing owl habitat, and potentially suitable burrows do not occur. Habitat for riparian/riverine plant species does occur within the Study Area, but habitat for MSHCP Riparian/Riverine animal species does not occur within the Study Area. The relatively small patch of open southern willow scrub (reflective of one tree) does not have the potential to support least Bell's vireo (*Vireo bellii pusillus*). The habitat is small and lacks a significant understory to create a layered habitat preferred by the species. The project would not conflict with the species survey requirements of the MSHCP.

Issue 6 Mitigation Measures

No mitigation is required.

FEDERAL CONFORMANCE ANALYSIS FOR BIOLOGICAL RESOURCES ISSUES

ISSUE 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?

Federally Listed Plant Species

No adverse effect. No federally listed plant species were found during the biological surveys or focused rare plant surveys conducted by HELIX in 2023, and none have the potential to occur. The project would primarily impact developed land and disturbed habitat, but relatively small impacts to sage scrub (i.e., Riversidian and Encelia scrub) would also occur. The Study Area soils are heavily rocky and not suitable for most rare plant species of the region. Given the site conditions, the lack of potential habitat for federally listed plant species, and the negative findings from the focused rare plant surveys, no direct or indirect effects on federally listed plant species are anticipated to occur as a result of the proposed project.

The following federally listed endangered (FE) and federally listed threatened (FT) plant species were analyzed for their potential to occur:

- Slender-horned spineflower (*Dodecahema leptoceras*); FE

  No critical habitat has been designated for this species.
- California Orcutt grass (*Orcuttia californica*); FE

  No critical habitat has been designated for this species.
- Munz onion (*Allium munzii*); FE

  There is final critical habitat for this species. The Study Area does not overlap the critical habitat.
- San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*); FE

  There is no designated critical habitat for this species. This species was reviewed for designation of critical habitat; however, no actual acres or miles were designated due to exemptions or exclusions.
- San Diego ambrosia (*Ambrosia pumila*); FE

  There is final critical habitat for this species. The Study Area does not overlap the critical habitat.
- spreading navarretia (*Navarretia fossalis*); FT

  There is final critical habitat for this species. The Study Area does not overlap the critical habitat.
- thread-leaved brodiaea (*Brodiaea filifolia*); FT

  There is final critical habitat for this species. The Study Area does not overlap the critical habitat.

No direct or indirect effects on federally listed plant species or critical habitat are anticipated to occur as a result of the proposed project.

Federally Listed Animal Species

No adverse effect. One federally listed animal species, coastal California gnatcatcher, was observed during the project surveys, which included focused surveys in accordance with the USFWS protocol. The project would primarily impact developed land and disturbed habitat, but relatively small impacts to coastal California gnatcatcher habitat (i.e., Riversidian and Encelia scrub) would also occur. Based on the site conditions and lack of suitable habitat, no other federally listed animal species were determined to have the potential to occur in the Study Area. The following federally listed endangered (FE), federally listed threatened (FT), and federal candidate for listing (FC) animal species were analyzed for their potential to occur:

- Western mastiff bat (*Eumops perotis californicus*); FE

  No critical habitat has been designated for this species.
- Quino checkerspot butterfly (*Euphydryas editha quino*); FE

  There is final critical habitat for this species. The Study Area does not overlap the critical habitat.
- Riverside fairy shrimp (*Streptocephalus woottoni*); FE

  There is final critical habitat for this species. The Study Area does not overlap the critical habitat.
- Coastal California gnatcatcher; FT

  There is final critical habitat for this species. The Study Area does not overlap the critical habitat. This species was observed in the Study Area.
- Least Bell's vireo; FE

  There is final critical habitat for this species. The Study Area does not overlap the critical habitat.
- western snowy plover (*Charadrius alexandrinus nivosus*); FT

  There is final critical habitat for this species. The Study Area does not overlap the critical habitat.
- San Bernardino Merriam's kangaroo rat (*Dipodomys merriami parvus*); FE

  There is final critical habitat for this species. The Study Area does not overlap the critical habitat.
- Stephens' kangaroo rat (*Dipodomys stephensi*); FT

  No critical habitat has been designated for this species.

Due to the presence of coastal California gnatcatcher and the potential effects on this species by the project, a USFWS ESA Section 7 consultation is required. Additionally, mitigation measures **Bio-1** and **Bio-2** would be implemented to avoid and reduce potential effects on coastal California gnatcatcher to a level not likely to adversely affect the species. USFWS protocol surveys were initiated on May 19, 2023. Besides the coastal California gnatcatcher, which would be addressed through the completion of an ESA

Section 7 consultation and mitigation measures **Bio-1** and **Bio-2**, no effects on other federally listed animal species are expected.

ISSUE 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?

No Effect. The proposed project does not include marine habitat or freshwater estuary spawning habitat. Canyon Lake is a freshwater habitat that is not used for spawning fish species that would migrate to marine habitat; therefore, Canyon Lake lacks marine resources and Essential Fish Habitat regulated under the Magnuson-Stevens Fishery Conservation and Management Act. Thus, the proposed project would not adversely affect Essential Fish Habitat and would be in conformance with the Magnuson-Stevens Fishery Conservation and Management Act.

ISSUE 3: Coastal Zone Management Act

Is any portion of the project site located within the coastal zone?

No Effect. No portion of the project site is located within the coastal zone. Therefore, the proposed project would have no effect on resources protected under the Coastal Zone Management Act.

ISSUE 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?

No adverse effect. Implementation of the project may require the removal or trimming of vegetation during the general bird and raptor nesting season (January 15 through September 15), which could result in potential adverse effects on nesting birds and raptors. Such potential effects on nesting would be in violation of the MBTA. Indirect effects could also occur as a result of construction noise generated during the breeding season in the immediate vicinity of areas supporting an active bird nest, whereby the disturbance results in nest abandonment or nest failure. However, with the implementation of mitigation measures **Bio-1**, **2**, and **3**, the proposed project would not adversely affect nesting birds (including raptors), and the project would be in conformance with the MBTA.

ISSUE 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 USACE?

No adverse effect. Portions of the project Study Area were evaluated, and a wetland delineation was conducted, which found that aquatic resources, potentially subject to USACE jurisdiction, occur. Specifically, the open water of Canyon Lake and the relatively small patches of habitat (i.e., southern willow scrub and herbaceous wetland) located along the shoreline were considered non-wetland waters

of the U.S. under USACE jurisdiction. Proposed project impacts to approximately 0.04 acre of open water, and less than 0.01 acre of herbaceous wetland may require a permit from the USACE. Given the minimal size and type of impact proposed, the anticipated permit from the USACE would be a Section 404 CWA Nationwide Permit. With the implementation of mitigation measure **Bio-5** and any additional measures required during permitting, the proposed project would not adversely affect USACE jurisdictional resources, and the project would be in conformance with the CWA.

Indirect or inadvertent impacts to areas subject to USACE permitting are not expected because the project would implement BMPs and adhere to the project's SWPPP. Examples of BMPs and measures to comply with the project SWPPP include:

- Covering stockpiled excavated and/or fill materials to reduce potential off-site sediment transport;
- Employing appropriate standard spill prevention practices and clean-up materials;
- Maintaining the project area free of trash and debris;
- Properly storing, handling, and disposing of toxins and pollutants, including waste materials;
- Using erosion control devices, such as straw wattles, mulch, mats, and/or geotextiles;
- Using sediment catchment structures such as hay bales, gravel or sandbags, silt fencing, fiber rolls, matting, berms, or similar devices along grading boundaries and drainage courses to prevent off-site sediment transport;
- Daily backfilling, compaction, and/or covering of excavated trenches to minimize erosion potential; and/or
- Regularly inspecting and maintaining all erosion control and sediment catchment facilities to ensure proper function and effectiveness.

ISSUE 6: Wild and Scenic Rivers Act:

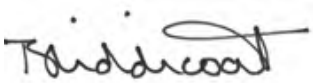
Is any portion of the project located within a wild and scenic river?

No Effect. None of the proposed project components are planned on or in the immediate vicinity of areas designated as Wild and Scenic Rivers. Therefore, the proposed project would not adversely affect any areas designated as Wild and Scenic Rivers and would be in conformance with the Wild and Scenic Rivers Act.

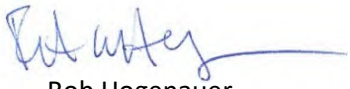
CLOSING

We appreciate the opportunity to provide you with this letter report. Please do not hesitate to contact me at (760) 525-5888 or Thomasl@helixepi.com or Rob Hogenauer at (562) 537-2426 or RobertH@helixepi.com if you have any questions or require further assistance.

Sincerely,



Thomas Liddicoat
Senior Biology Project Manager



Rob Hogenauer
Senior Scientist

Attachments:

Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Location on Aerial
Figure 4a: Project Plans
Figure 4b: Intake Pump Station Piping Plan
Figure 4c: Gangway and Dock Cross Section
Figure 5: Vegetation and Land Uses
Figure 6: MSCHP Cells
Figure 7: Soils
Figure 8: CDFW Jurisdiction
Figure 9: RWQCB Jurisdiction
Figure 10: USACE Jurisdiction
Figure 11: Vegetation and Land Uses Impacts
Figure 12: CDFW Jurisdictional Impacts
Figure 13: RWQCB Jurisdictional Impacts
Figure 14: USACE Jurisdictional Impacts

Attachment A: Plant Species Observed
Attachment B: Animal Species Observed or Detected
Attachment C: Representative Site Photos
Attachment D: Special Status Plant Species with Potential to Occur
Attachment E: 2023 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for the Canyon Lake Water Treatment Plant Improvements Project
Attachment F: Special Status Animal Species with Potential to Occur
Attachment G: Status Codes
Attachment H: IPaC Report

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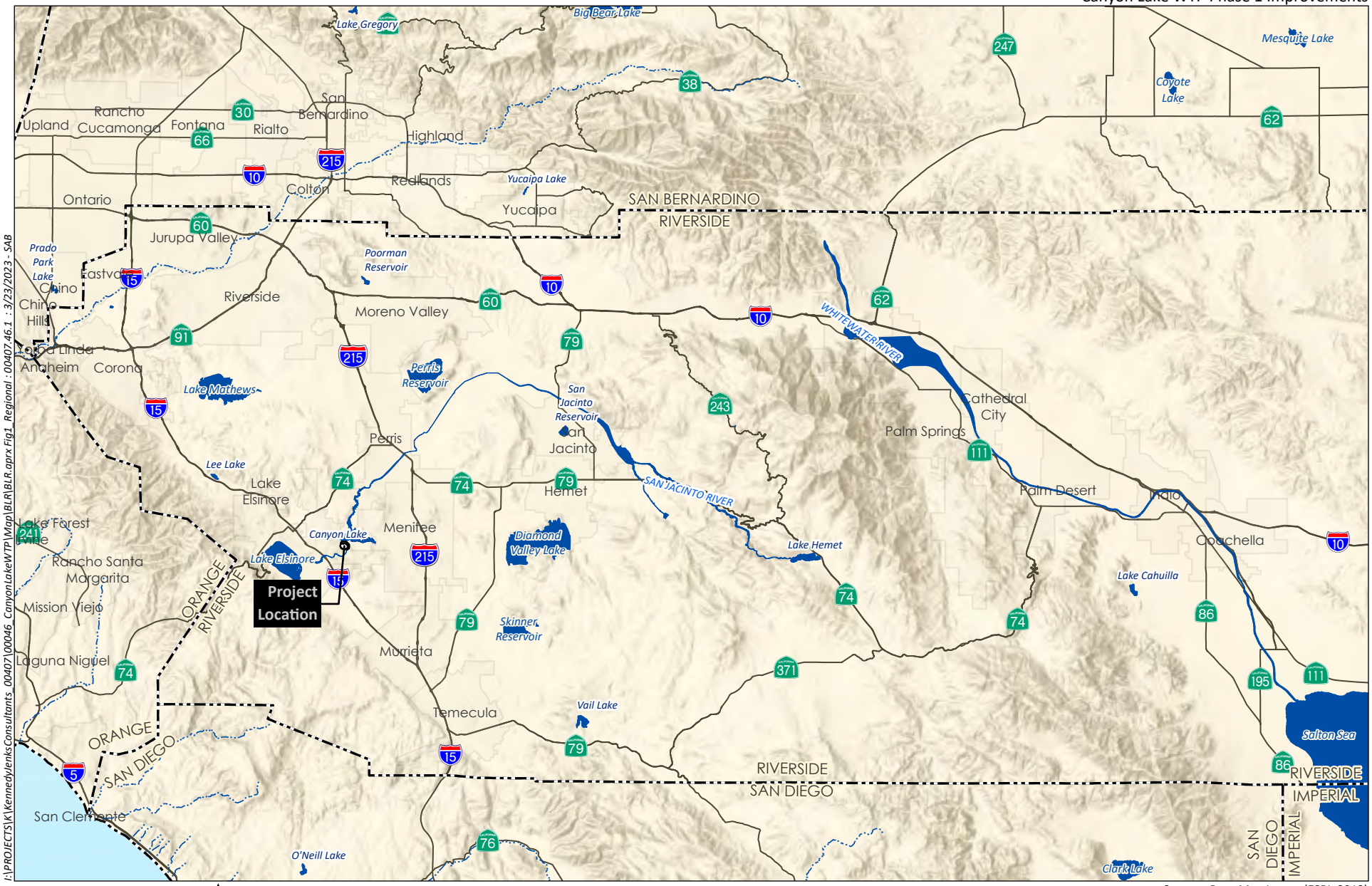
Figures



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0 10 Miles

Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1



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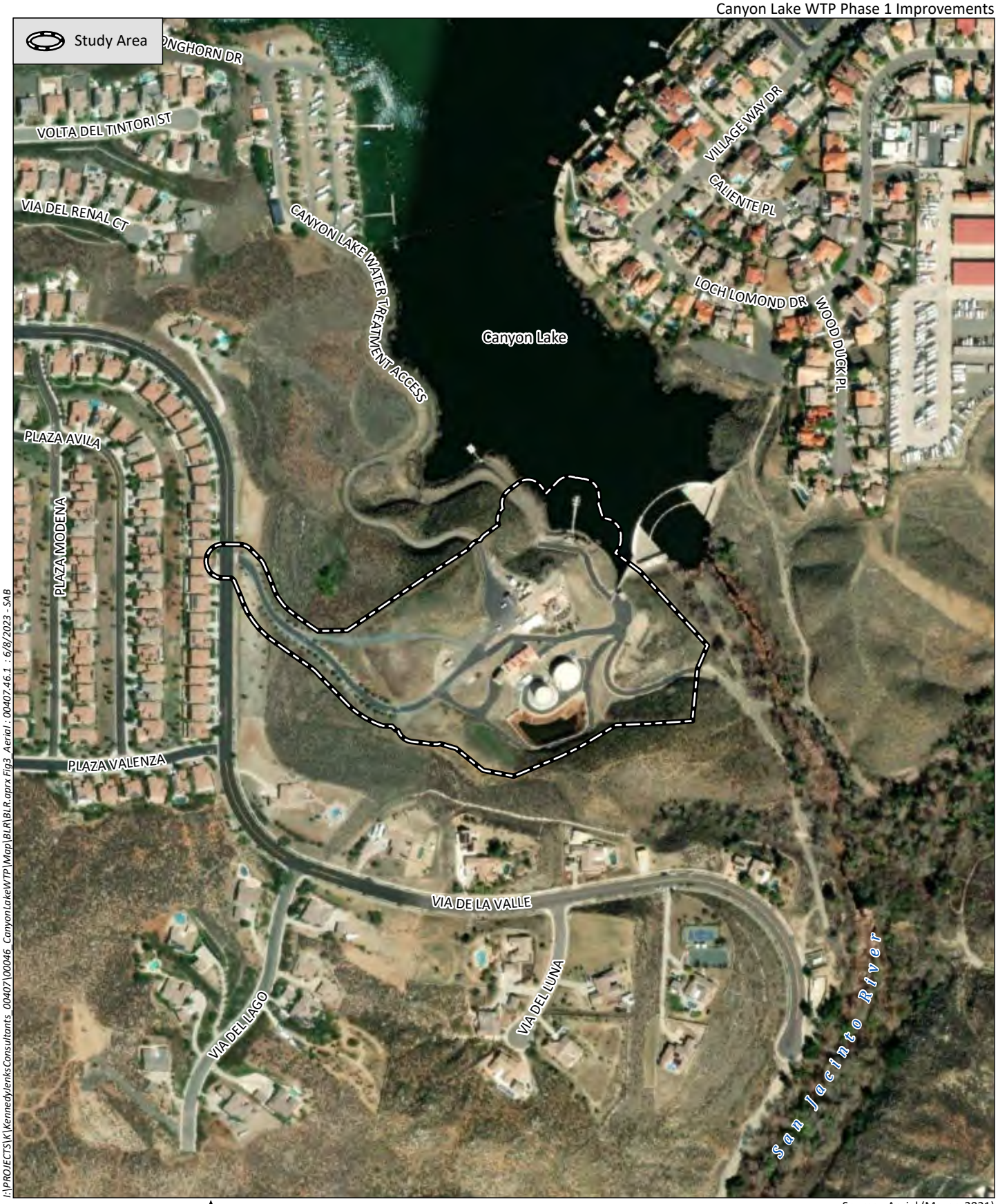
Source: LAKE ELSINORE 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2



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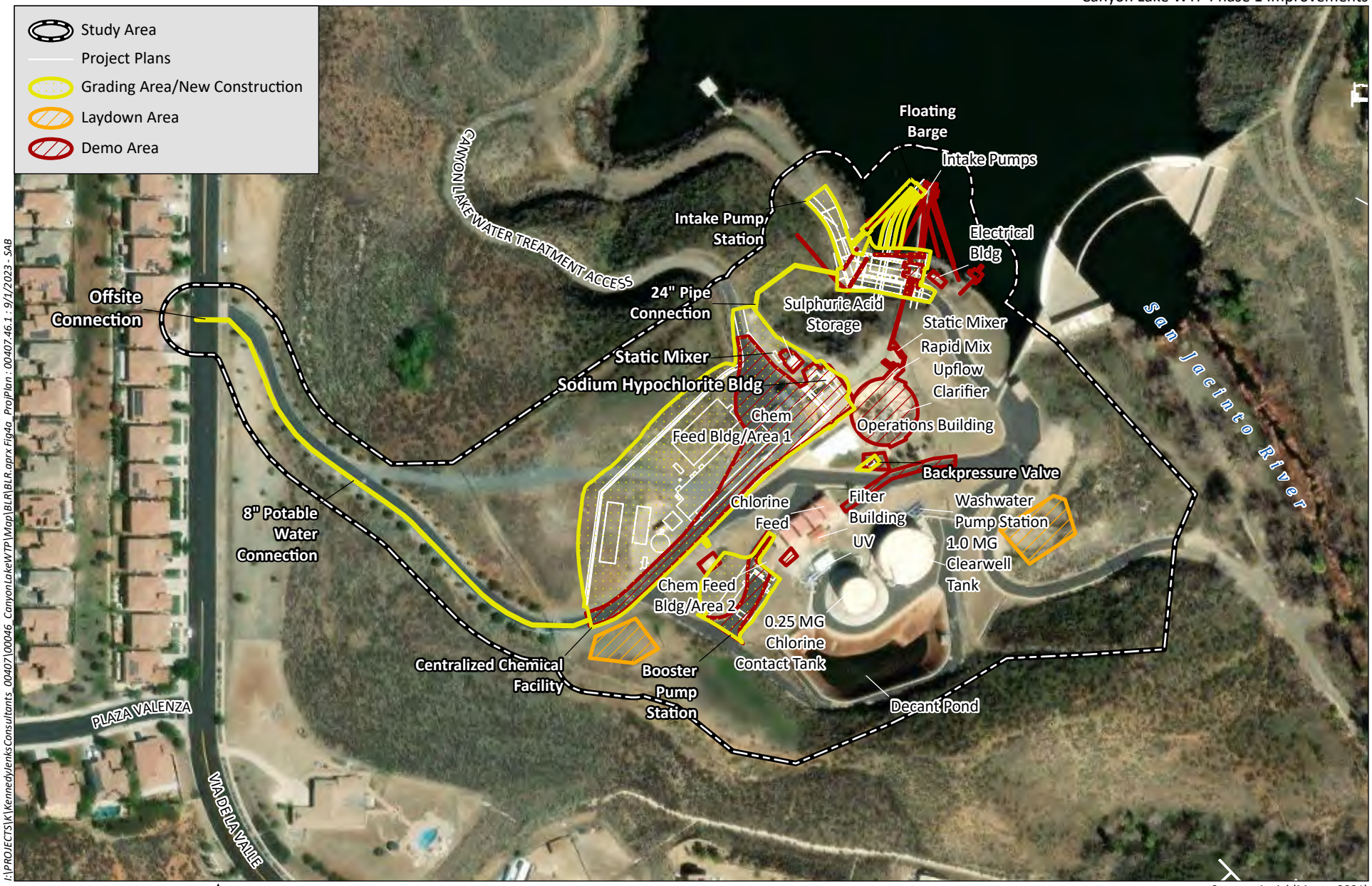
0 400 Feet

Source: Aerial (Maxar, 2021)

HELIX Environmental Planning

Location on Aerial

Figure 3

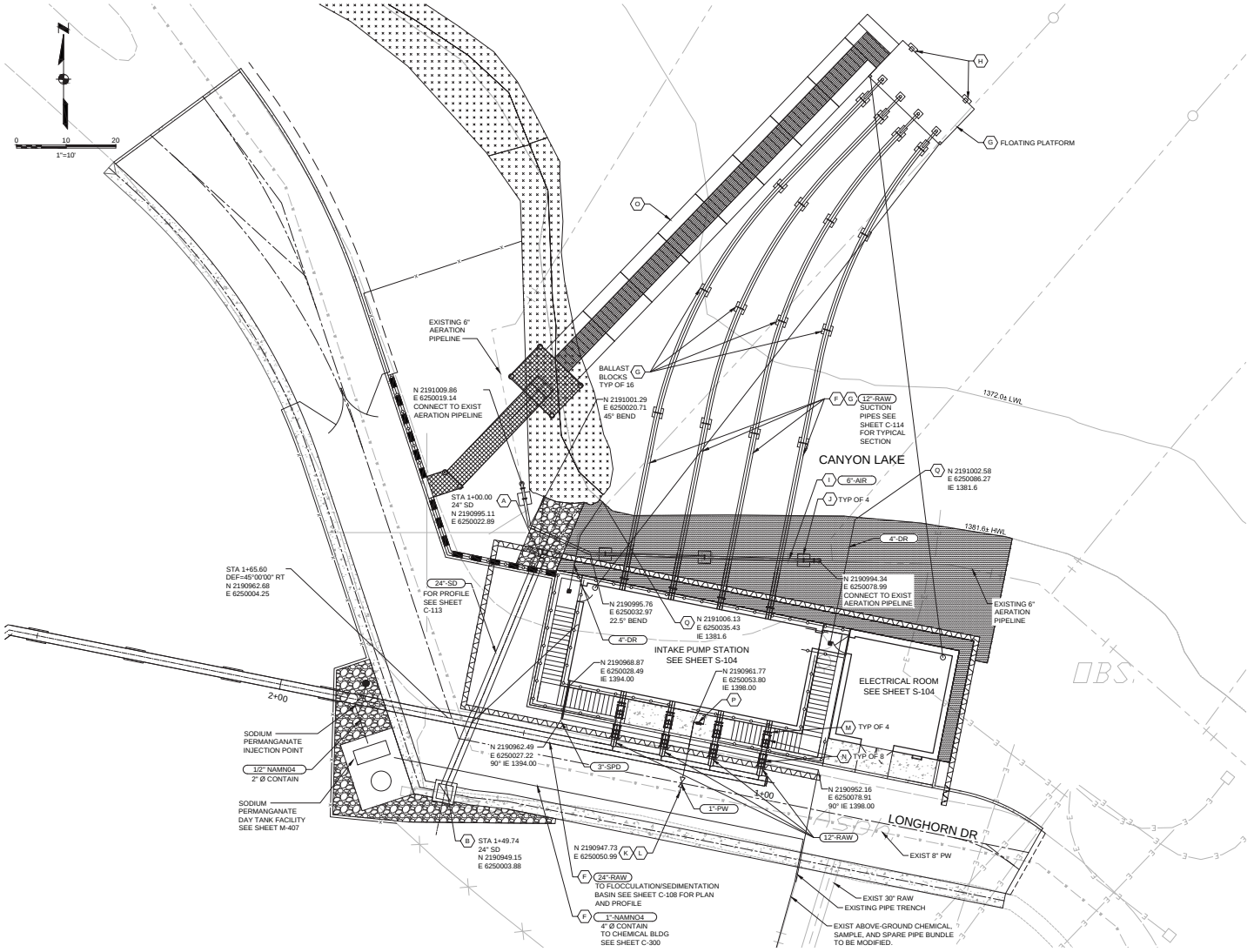


Source: Aerial (Maxar, 2021)

HELIX Environmental Planning

Project Plans

Figure 4a



GENERAL SHEET NOTES

1. PIPE TRENCHING SHALL BE PER EVMWD STD PLAN NO. W-3
2. THE CONTRACTOR SHALL NOT PERFORM ANY CONSTRUCTION ACTIVITY WITHIN THE RESTRICTIVE ENVIRONMENTAL PROTECTION ZONE UNLESS SHOWN OTHERWISE. DISTURBED VEGETATION IN THE ENVIRONMENTAL PROTECTION ZONE SHALL BE REPLACED IN KIND AFTER CONSTRUCTION COMPLETION.

SHEET KEYNOTES

A. BEGIN CONSTRUCTION.
B. END CONSTRUCTION.
C. NOT USED.
D. NOT USED.
E. NOT USED.
F. CONSTRUCT PIPE.
G. FOR MANUFACTURED FLOATING PLATFORM SYSTEMS INCLUDING SUCTION PIPES, BALLAST BLOCKS, WINCHES, ANCHORING, AND ACCESSORIES, SEE SPEC SECTION 11399.
H. BALLAST BLOCK AND MANUALLY OPERATED WINCH TO MAINTAIN POSITIONING OF FLOATING WORK PLATFORM.
I. THE STAINLESS STEEL AIR HEADER LOCATED ALONG THE SHORELINE SHALL BE RAISED ABOVE 12 INCH RAW LINE AND SUPPORTED AT MAXIMUM SPACING OF 20 FEET.
J. CONCRETE SADDLE PIPE SUPPORTS.
K. CONNECT TO EXISTING 8" PW FOR 1" SERVICE WATER CONNECTION WITHOUT WATER METER ASSEMBLY SIMILAR TO EVMWD STD DWG NO. W-9.
L. LOCATION AND/OR DEPTH ARE UNKNOWN. THE CONTRACTOR SHALL POTHOLE EXISTING BURIED PIPE PRIOR TO CONSTRUCTION.
M. CONSTRUCT BURIED INSULATING FLANGE PER EVMWD STD DWG NO. CP-1 WITH CATHODIC TEST STATION PER EVMWD STD DWG NO. CP-4.
N. CONSTRUCT RESTRAINED FLEXIBLE COUPLING SIMILAR TO TYP DETAIL MP330 ON SHEET C-127.
O. FLOATING ACCESS WALKWAY, SEE SPEC SECTION 11399.
P. CONSTRUCT 1" REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER PER EVMWD STD DWG NO W-21B.
Q. CONSTRUCT STAINLESS STEEL SCREEN AT END OF DRAINS.

LEGEND

RIP-RAP
SHOTCRETE
ENVIRONMENTAL PROTECTION ZONE
RETAINING WALL

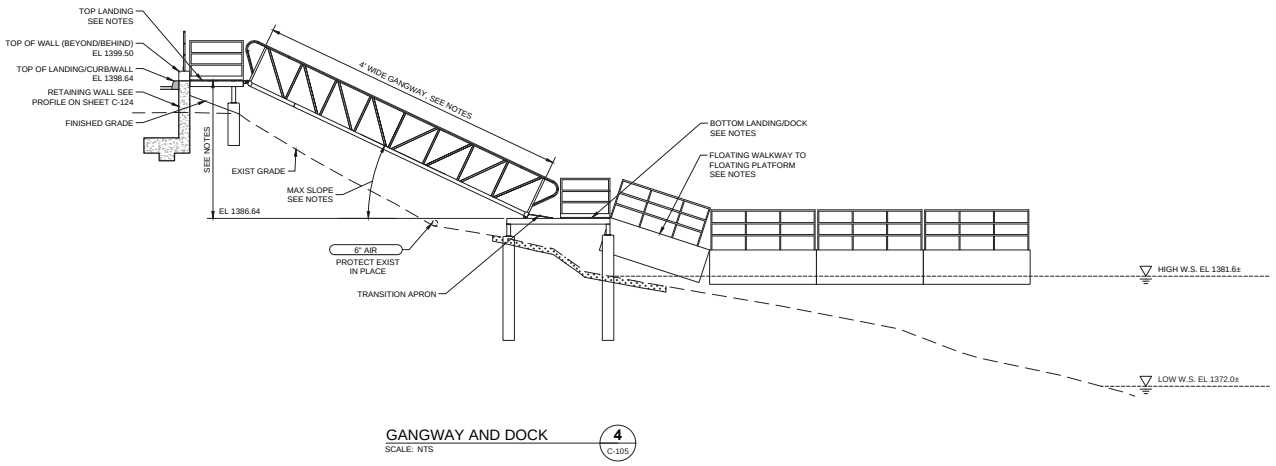
I:\PROJECTS\K\KennedyJenksConsultants_00407\00046_CanyonLakeWTP\Map\BLR\Fig4b_IntakePump.indd 00407.00046.001 08/30/2023 -SAB

Source: Kennedy Jenks (2023)

HELIX Environmental Planning

Intake Pump Station Piping Plan

Figure 4b



GANGWAY AND DOCK 4
SCALE: NTS C-105

NOTES

1. DETAILS AND DIMENSIONS SHOWN HEREIN ARE APPROXIMATE AND FOR INFORMATION ONLY.
2. ALL MANUFACTURED LANDINGS, GANGWAY, AND FLOATING SYSTEMS SHOWN REQUIRE SECURE ANCHORING AND SUPPORT. THE CONTRACTOR SHALL DETERMINE THE FINAL LOCATIONS BASED ON THE MANUFACTURER'S FABRICATIONS AND ADJUST ACCORDINGLY TO THE SHOP DRAWINGS.
3. FOR MANUFACTURED LANDINGS, ANCHORING, SUPPORT COLUMNS/FOUNDATIONS, 4' GANGWAY, AND FLOATING WALKWAYS, SEE SPEC SECTION 11399.
4. GANGWAY SLOPE SHALL NOT EXCEED 30 DEGREES FROM THE HORIZONTAL PLANE.
5. THE CONTRACTOR SHALL NOT PERFORM ANY CONSTRUCTION ACTIVITY WITHIN THE RESTRICTIVE ENVIRONMENTAL PROTECTION ZONE UNLESS SHOWN OTHERWISE. DISTURBED VEGETATION IN THE ENVIRONMENTAL PROTECTION ZONE SHALL BE REPLACED IN KIND AFTER CONSTRUCTION COMPLETION.

LEGEND

ENVIRONMENTAL PROTECTION ZONE

2/2023 - 90% SUBMITTAL

DESIGN DEVELOPMENT PHASE

I:\PROJECTS\K\KennedyJenksConsultants_00407\00046_CanyonLakeWTP\Map\BLR\Fig4c_DockXsect.indd 00407.00046.001 08/30/2023 -SAB

Source: Kennedy Jenks (2023)

HELIX Environmental Planning

Gangway and Dock Cross Section

Figure 4c



Source: Aerial (Maxar, 2021)

HELIX Environmental Planning

Vegetation and Land Uses

Figure 5



Source: Aerial (Maxar, 2021)

HELIX Environmental Planning

MSHCP Cells

Figure 6



0 250 Feet

Source: Aerial (Maxar, 2021)

HELIX Environmental Planning

Soils

Figure 7



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Source: Aerial (Maxar, 2021)

HELIX Environmental Planning

CDFW Jurisdiction

Figure 8



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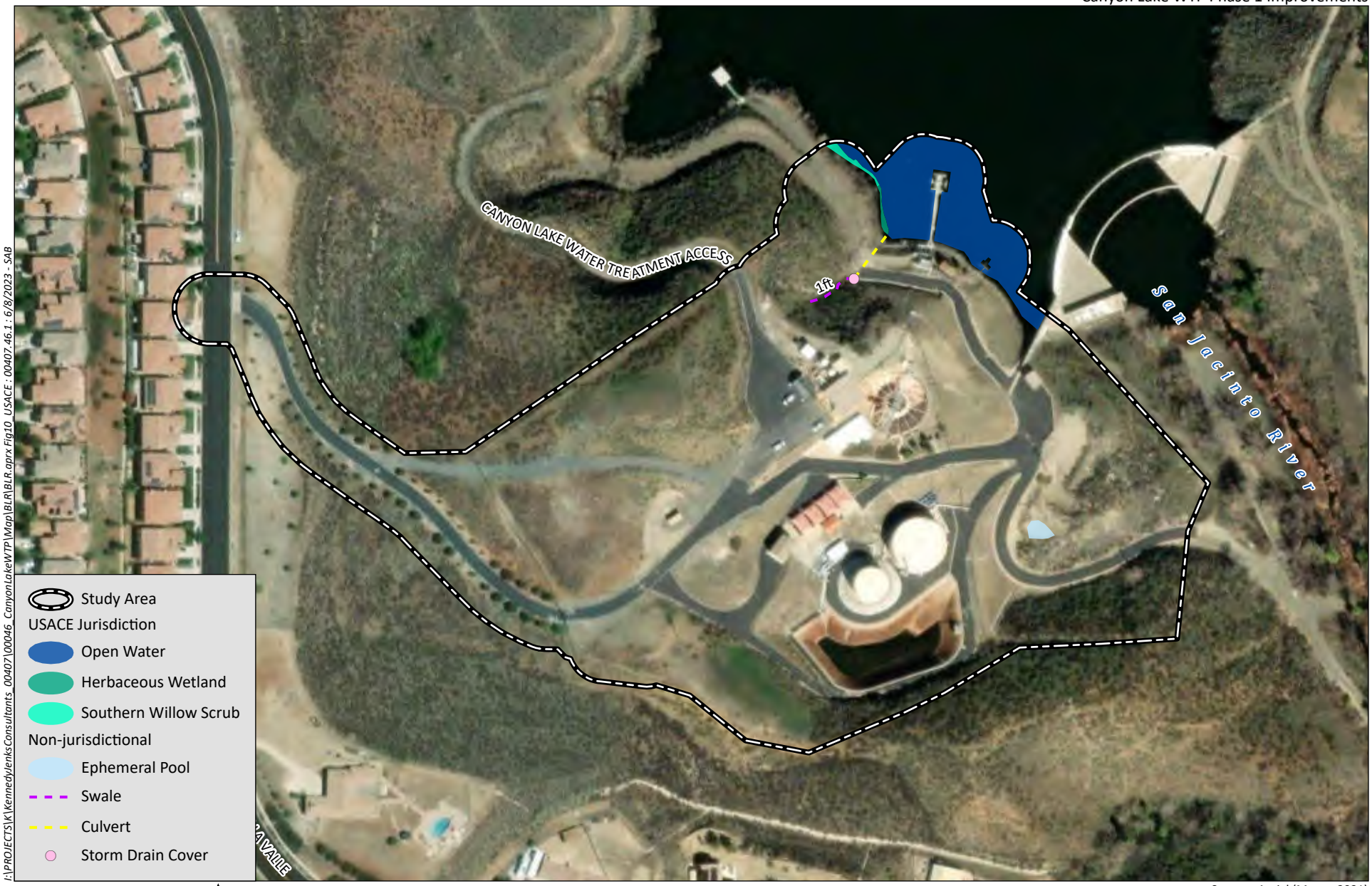
Source: Aerial (Maxar, 2021)

HELIX Environmental Planning

RWQCB Jurisdiction

Figure 9



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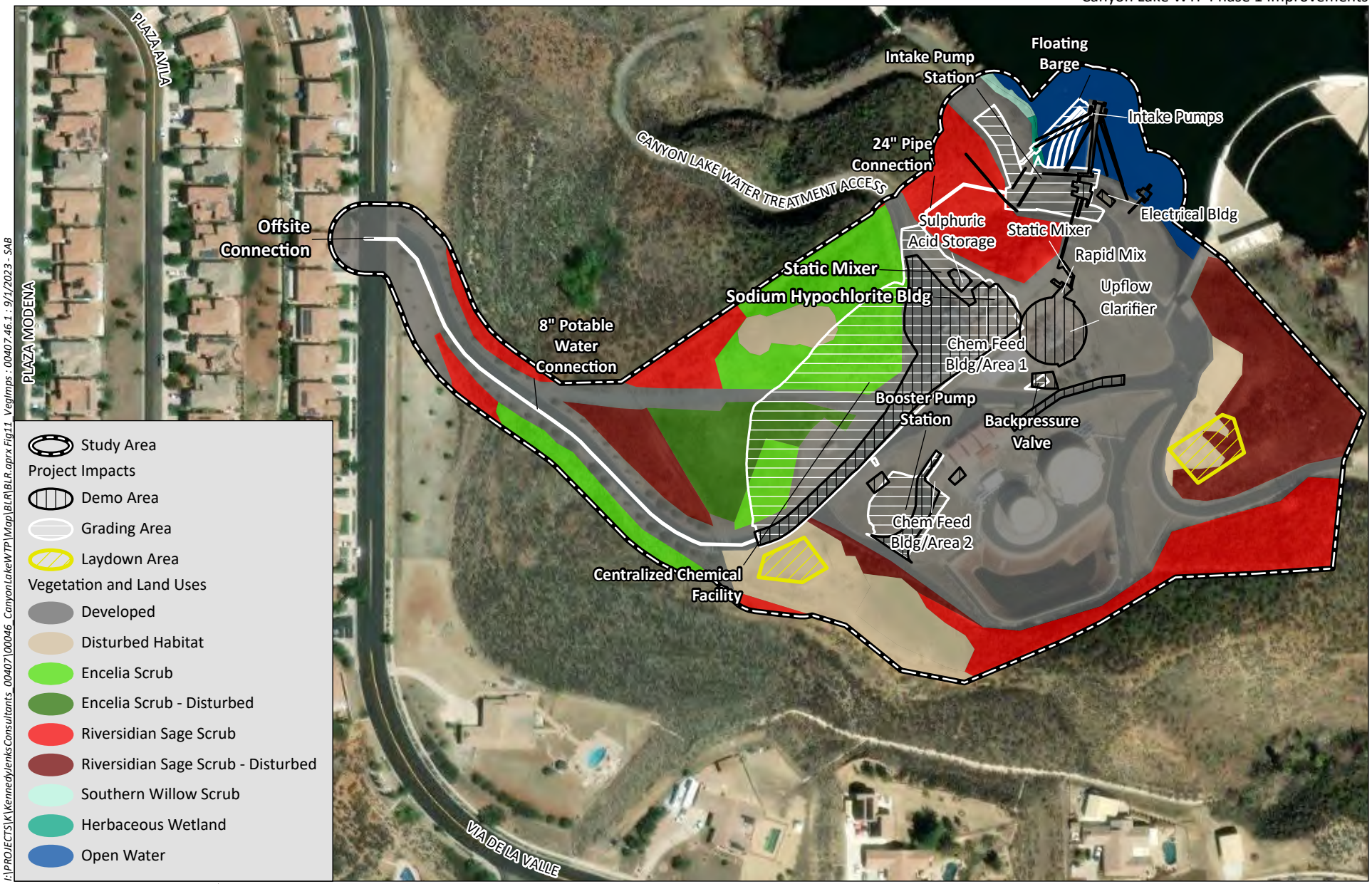
Source: Aerial (Maxar, 2021)

HELIX Environmental Planning

USACE Jurisdiction

Figure 10



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Source: Aerial (Maxar, 2022)

HELIX Environmental Planning

Vegetation and Land Uses Impacts

Figure 11



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Source: Aerial (Maxar, 2021)

HELIX Environmental Planning

CDFW Jurisdictional Impacts

Figure 12



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Source: Aerial (Maxar, 2021)

HELIX Environmental Planning

RWQCB Jurisdictional Impacts

Figure 13



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Source: Aerial (Maxar, 2021)

HELIX Environmental Planning

USACE Jurisdictional Impacts

Figure 14

Attachment A

Plant Species Observed

Family	Scientific Name*,†	Common Name
Dicots		
Apiaceae	*Daucus pusillus*	American wild carrot
Asteraceae	*Baccharis pilularis*	Coyote brush
	Baccharis salicifolia	Mule fat
	*Centaurea melitensis**	tocalote
	Corethrogyne filaginifolia	San Diego sand aster
	Artemisia californica	California sagebrush
	Encelia farinosa	Brittlebush
	Gutierrezia californica	San Joaquin snakeweed
	Lasthenia californica	Goldfields
	*Oncosiphon piluliferum**	Stinknet
	*Pulicaria paludosa**	Spanish false fleabane
Boraginaceae	*Amsinckia intermedia*	rancher's fiddleneck
	Plagiobothrys sp.	Popcorn flower
Brassicaceae	*Hirschfeldia incana**	Mustard
	*Brassica nigra**	Black mustard
	*Sisymbrium irio**	London rocket
Cactaceae	*Cylindropuntia californica*	Cane cholla
Crassulaceae	*Dudleya lanceolata*	Coastal dudleya
	Crassula connata	Pygmy-weed
Cuscutaceae	*Cuscuta* sp.	Dodder
Fabaceae	*Acacia redolens**	Bank catclaw
	Acmispon glaber	Deer weed
Geraniaceae	*Erodium cicutarium**	Red-stem filaree
Hydrophyllaceae	*Phacelia minor*	Wild Canterbury bell
Lamiaceae	*Salvia apiana*	White sage
	Salvia columbariae	Chia
	*Marrubium vulgare**	Horehound
Liliaceae	Calochortus splendens	Splendid Mariposa
	Bloomeria crocea	Golden Stars
Onagraceae	*Ludwigia peploides**	Floating water primrose
Papaveraceae	*Eschscholzia californica*	California poppy
Portulacaceae	*Claytonia perfoliata*	Miners lettuce
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat, California buckwheat
Ranunculaceae	*Delphinium parryi*	Blue larkspur
Salicaceae	*Populus fremontii*	Fremont cottonwood
	Salix gooddingii	Gooding's willow, Goodding's black willow
Sterculiaceae	*Brachychiton populneum**	Whiteflower kurrajong
Tamaricaceae	*Tamarix parviflora**	tamarisk
Monocots		
Cyperaceae	*Cyperus involucratus**	Umbrella sedge
Liliaceae	*Dichelostemma capitatum*	blue dicks
Poaceae	*Avena barbata**	Slim oat, Slender wild oat
	*Bromus madritensis**	foxtail chess
	*Festuca myuros**	Rat-tail fescue

* Non-native

† Sensitive

Attachment B

Animal Species Observed or Detected

Taxon Order	Taxon Family	Scientific Name	Common Name
INVERTEBRATES			
Hymenoptera	Formicidae	*Pogonomyrmex* spp.	harvester ant
Lepidoptera	Pieridae	*Colias eurytheme*	cloudless sulfur butterfly
	Pieridae	*Pieris protodice*	common white butterfly
VERTEBRATES			
Reptiles			
Squamata	Phrynosomatidae	*Sceloporus orcutti*	granite spiny lizard
	Teiidae	*Aspidoscelis hyperythrus*†	orange-throated whiptail
Birds			
Anseriformes	Anatidae	*Anas clypeata*	Northern shoveler
	Anatidae	*Branta canadensis*	Canadian goose
Apodiformes	Trochilidae	*Calypte anna*	Anna's hummingbird
Charadriiformes	Laridae	*Larus sp.*	Gull
Columbiformes	Columbidae	*Zenaida macroura*	mourning dove
Passeriformes	Corvidae	*Corvus corax*	common raven
	Corvidae	*Carpodacus mexicanus*	house finch
	Emberizidae	*Artemisiospiza belli belli*†	Bell's sage sparrow
	Tyrannidae	*Sayornis saya*	Say's phoebe
	Tyrannidae	*Sayornis nigricans*	black phoebe
	Sylviidae	*Polioptila californica californica*†	coastal California gnatcatcher
	Fringillidae	*Carduelis tristis*	American goldfinch
	Passerellidae	*Aimophila ruficeps canescens*†	Southern California rufous-crowned sparrow
Piciformes	Picidae	*Colaptes auratus*	northern flicker
Suliformes	Phalacrocoracidae	*Phalacrocorax auritus*	double-crested cormorant
Mammals			
Carnivora	Canidae	Canis latrans	coyote

† Sensitive

Attachment C

Representative Site Photos



View looking south showing Riversidian sage scrub and Encelia scrub in the Study Area. Photo taken March 27, 2023.



View looking north showing disturbed Riversidian sage scrub and Encelia scrub in the Study Area. Photo taken March 27, 2023.

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View looking southeast showing Riversidian sage scrub in the Study Area with a portion of the water treatment facility visible in the background. Photo taken March 27, 2023.



View looking west showing disturbed habitat at hilltop that is proposed to be impacted. Photo taken March 17, 2023.

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View looking east showing unvegetated disturbed habitat. Photo taken March 27, 2023.



View looking north showing vegetated disturbed habitat with water treatment facility in background. Photo taken March 27, 2023.

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Closeup view of rocky soils that dominate the undeveloped portion of the Study Area. Photo taken March 27, 2023.



View looking north showing location of ephemeral pool and associated disturbed habitat and lack of vegetation at pool location. Photo taken May 16, 2023.

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View looking north at dock to be removed and replaced. Photo taken March 17, 2023.



View looking north at spillway showing water level at spillway height. Photo taken May 16, 2023.

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View looking north at dock to be removed and replaced. Photo taken March 17, 2023.



View looking north at spillway showing water level at spillway height. Photo taken May 16, 2023.

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View looking north showing location of non-jurisdictional swale with dock and spillway in background. Photo taken March 27, 2023.



View looking northwest along entrance driveway showing ornamental trees. Photo taken March 17, 2023.

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Attachment D

Special Status Plant Species with Potential to Occur

Species Name	Common Name	Status[1, 2]	Habitat, Ecology, and Life History	Potential to Occur
Allium munzii	Munz's onion	FE/ST CRPR 1B.1	Perennial herb. Grows in mesic areas on clay soils within grassland, coastal scrub, chaparral, cismontane woodland, and pinyon-juniper woodland. Found within Riverside County. Flowering period: March to May. Elevation: 974 to 3,510 feet (297 to 1,070 meters).	**Not Likely to Occur.** Appropriate soils preferred by this species not present in study area. Not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
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- October Elevation: 65-1,360 feet (20-415 meters).	**Low.** Marginally suitable habitat and soils present in study area. Species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
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-August. Elevation: 455-1,640 feet (139-500 meters).	**Not Likely to Occur.** Suitable grassland or vernal pool habitats not present in study area. One ephemeral pool was found present in the study area; however, is located in heavily disturbed hardpan area devoid of vegetation. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Viguiera laciniata	San Diego County viguiera	--/-- CRPR 4.3	Perennial shrub. Occurs on a variety of soil types within coastal sage scrub in San Diego County. Generally, shrub cover is more open than at mesic, coastal locales supporting sage scrub. Found along the coastal regions from Ventura County south to San Diego County and western Riverside County. Flowering period: February to August. Elevation: 295 to 2,461 feet (90 to 750 meters).	**Not Likely to Occur.** Suitable habitat for this species present in the study area; however, this is a conspicuous perennial shrub species that would be easily observed when present. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.

Species Name	Common Name	Status[1, 2]	Habitat, Ecology, and Life History	Potential to Occur
Brodiaea filifolia	Thread-leaved brodiaea	FT/SE CRPR 1B.1	Perennial herb. Often associated with vernal pools. Also occurs within playas, grasslands, coastal scrub, openings in chaparral, and cismontane woodland; often on clay soils. Found in Los Angeles, Orange, San Bernardino, Riverside, and San Diego counties. Flowering period: March to June. Elevation: 80 to 3,675 feet (25 to 1,120 meters).	**Not Likely to Occur.** Marginal habitat with low suitability for species is limited to single ephemeral pool (in disturbed habitat and unvegetated) on hardpan and coastal scrub. Preferred clay soils suitable for this species is not present. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Carex buxbaumii	Buxbaum's sedge	--/-- CRPR 4.2	Perennial herb. Associated with bogs, fens, meadows, seeps, marshes and swamps.	**Not Likely to Occur.** Suitable marsh or meadow habitat does not occur in study area. Aquatic edge of the Lake is rocky and not likely to support this species. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Caulanthus simulans	Payson's jewelflower	--/-- CRPR 4.2	Annual herb. Occurs within coastal sage scrub, chaparral, and pinyon-juniper woodlands on sandy and granitic soils. Found in Riverside and San Diego counties. Flowering period: February to June. Elevation: 295 to 7,220 feet (90 to 2,200 meters).	**Low.** Suitable habitat of coastal sage scrub occurs in study area; however, soils are rocky loam from sandstone and do not have a granitic origin. Not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Centromadia pungens ssp. *laevis*	smooth tarplant	--/-- CRPR 1B.1	Annual herb. Occurs on alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland. Found in San Bernardino, Los Angeles, Riverside, and San Diego counties. Flowering Period: April to September. Elevation: below 2,100 feet (640 meters).	**Not Likely to Occur.** Suitable scrub, meadows, or riparian woodland habitat not present in study area. Additionally, appropriate alkaline soils preferred by this species are not present in the study area. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.

Species Name	Common Name	Status[1, 2]	Habitat, Ecology, and Life History	Potential to Occur
Chorizanthe leptotheca	Peninsular spineflower	--/-- CRPR 4.2	Annual herb. Occurs on alluvial fans and sandy and gravelly soils within coastal sage scrub, chaparral, and coniferous forests. Found within San Bernardino, Riverside, and San Diego counties. Flowering period: May to August. Elevation: 980 to 6,235 feet (300 to 1,900 meters).	**Not Likely to Occur.** Suitable alluvial fan habitat not present in study area. Soils are gravelly but not sandy. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Chorizanthe parryi var. *parryi*	Parry's spineflower	--/-- CRPR 1B.1	Annual herb. Occurs in sandy soil on flats and foothills in mixed grassland, coastal sage scrub, and chaparral. Found in the San Gabriel and San Bernardino Mountains and western Transverse Ranges within Los Angles, San Bernardino, and Riverside counties. Flowering Period: April to June. Elevation: 900 to 4,005 feet (275 to 1,220 meters).	**Not Likely to Occur.** Suitable habitat with sandy soils not present in the study area. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	--/-- CRPR 1B.2	Annual herb. Occurs in chaparral, coastal scrub, and native grassland, often on clay soils. Found within Orange, Riverside, San Bernardino, and San Diego counties. Flowering period: April to July. Elevation: 95 to 5,020 feet (30 to 1,530 meters).	**Low.** Suitable vegetation habitat present, but clay soil appropriate for this species is not present in the study area. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Convolvulus simulans	small-flowered morning-glory	--/-- CRPR 4.2	Annual herb. Occurs on clay soils and serpentinite seeps in openings within chaparral, coastal scrub, and native grassland. Found within the San Francisco Bay area, San Joaquin Valley, western Sierra Nevada foothills, along the coast of southern California, the Channel Islands, and the western Transverse and Peninsular Ranges. Flowering period: April to June. Elevation: 95 to 2,430 feet (30 to 740 meters).	**Low.** Suitable vegetation habitat present, but clay soil appropriate for this species is not present in the study area. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.

Species Name	Common Name	Status[1, 2]	Habitat, Ecology, and Life History	Potential to Occur
Deinandra paniculata	paniculate tarplant	--/-- CRPR 4.2	Annual herb. Occurs in vernally mesic areas, sometimes sandy soils, in coastal scrub, valley and foothill grassland, and vernal pools with sandy soil. Found along the coastal regions from San Luis Obispo County south to San Diego County and east to western San Bernardino and Riverside counties. Flowering Period: March to December. Elevation: 80 to 3,100 feet (25 to 940 meters).	**Not Likely to Occur.** Suitable vegetation habitat present, but the site is not considered vernally mesic. Appropriate sandy soils suitable for this species are not present in the study area. Rocky soils on-site are not typical suitable habitat for species. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Dodecahema leptoceras	slender-horned spineflower	FE/SE CRPR 1B.1	Annual herb. Found in sandy and gravelly soils or alluvial fans in coastal sage scrub, chaparral, and woodlands. Found in the San Gabriel, San Bernardino, and San Jacinto Mountains and the western Transverse and Peninsular Ranges of Los Angeles, San Bernardino, and Riverside counties. Flowering Period: April to June. Elevation: 655 to 2,500 feet (200 to 760 meters).	**Low.** Appropriate vegetation present; however, alluvial fan habitat not present in study area. Soils are gravelly but not sandy. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Dudleya multicaulis	many-stemmed dudleya	--/-- CRPR 1B.2	Perennial herb. Found in clay soils and sandstone outcrops associated with coastal sage scrub, chaparral, and valley grasslands. Found along the coastal regions from Los Angeles County south to San Diego County, and western Riverside and San Bernardino counties. Flowering Period: April to July. Elevation: 45 to 2,590 feet (15 to 790 meters).	**Low.** Suitable vegetation habitat present, but clay soil appropriate for this species is not present in the study area. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.

Species Name	Common Name	Status[1, 2]	Habitat, Ecology, and Life History	Potential to Occur
Harpagonella palmeri	Palmer's grapplinghook	--/-- CRPR 4.2	Annual herb. Grows on clay soils within openings of grasslands, coastal sage scrub, and chaparral. Found in Los Angeles, Orange, San Diego, and Riverside counties. Flowering Period: March to May. Elevation: 65 to 3,135 feet (20 to 955 meters).	**Low.** Suitable vegetation habitat present, but clay soil appropriate for this species is not present in the study area. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Hordeum intercedens	vernal barley	--/-- CRPR 3.2	Annual herb. Occurs in vernal pools, alkaline flats, and dry, saline streambeds. Also found in saline flats and depressions within grasslands. Found in the San Joaquin Valley, South Coast and Peninsular Ranges, San Jacinto Mountains, and southern coast of California. Flowering period: March to June. Elevation: below 3,280 feet (1,000 meters).	**Not Likely to Occur.** Suitable vernal pool or streambed habitat does not occur in study area. A single ephemeral pool on hardpan was found in the study area but is devoid of vegetation. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Juglans californica	Southern California black walnut	--/-- CRPR 4.2	Perennial tree. Grows in alluvial soils within coastal sage scrub, chaparral, riparian woodlands, and cismontane woodlands. Found along the southern California coast from Monterey County south to San Diego County and east into western Transverse and Peninsular Ranges, including San Jacinto and San Gabriel Mountains. Flowering period: March to August. Elevation: 165 to 2,955 feet (50 to 900 meters).	**Not Likely to Occur.** Suitable scrub vegetation present, but appropriate alluvial soils not present in study area. This is a conspicuous perennial tree species that would be easily observed when present. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.

Species Name	Common Name	Status[1, 2]	Habitat, Ecology, and Life History	Potential to Occur
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	--/-- CRPR 1B.1	Annual herb. Grows in vernal pools, playas, and saline habitats within alkali sinks, coastal salt marshes, and wetland habitats. Found along the Coast, Sierra Nevada, and Peninsular Ranges; Sacramento and San Joaquin Valleys; central and southern coasts; Mojave Desert; and north Channel Islands. Flowering period: April to May. Elevation: below 4,005 feet (1,220 meters).	**Not Likely to Occur.** Suitable ephemeral wetland habitat not present and appropriate alkaline soil for this species is not present in the study area. A single ephemeral pool on hardpan was found in the study area but is devoid of vegetation. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	--/-- CRPR 4.3	Annual herb. Grows in openings of sage scrub and chaparral at the coastal and foothill elevations throughout California. Typically observed in relatively dry, exposed locales rather than beneath a shrub canopy. Also, found in disturbed areas. Flowering period: March to June. Elevation: below 9,186 feet (2,800 meters).	**Low.** Suitable scrub habitat occurs in study area. However, this species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	--/-- CRPR 4.2	Annual herb. Found on clay soils within coastal sage scrub, woodlands, and grasslands. Often near vernal pools or serpentine outcrops. Found in Los Angeles, Orange, Riverside, and San Diego counties and the Channel Islands. Flowering period: March to May. Elevation: 49 to 3,510 feet (15 to 1,070 meters).	**Not Likely to Occur.** Suitable vegetation present, but appropriate clay soil is not present in the study area. A single ephemeral pool on hardpan was found in the study area but is devoid of vegetation. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.

Species Name	Common Name	Status[1, 2]	Habitat, Ecology, and Life History	Potential to Occur
Myosurus minimus ssp. *apus*	little mousetail	--/-- CRPR 3.1	Annual herb. Occurs in alkaline vernal pools within native grassland. Flowering period: March to June. Found within San Joaquin Valley south to San Diego County and east to western Riverside and San Bernardino counties. Elevation: 65 to 2,100 feet (20 to 640 meters).	**Not Likely to Occur.** Suitable vernal pool habitat not present. A single ephemeral pool on hardpan was found in the study area but is devoid of vegetation. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Navarretia fossalis	spreading navarretia	FT/-- CRPR 1B.1	Annual herb. Occurs in vernal pools, vernal swales, roadside depressions, playas, marshes and swamps, and chenopod scrub. Population size is strongly correlated with rainfall. Depth of pool appears to be a significant factor as this species is rarely found in shallow pools. Found in the Mojave Desert, desert mountains, Channel Islands, and the Transverse and Peninsular Ranges. Flowering period: April to June. Elevation: 98 to 4,265 feet (30 to 1,300 meters).	**Not Likely to Occur.** Suitable vernal pool habitat not present. A single ephemeral pool on hardpan was found in the study area but is devoid of vegetation. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.
Orcuttia californica	California Orcutt grass	FE/SE CRPR 1B.1	Annual herb. Occurs in vernal pools. Tends to grow in wetter portions of the vernal pool basins but does not show much growth until the basins become somewhat desiccated. Found in the coastal regions of southern California from Ventura County south to San Diego County and in western Riverside County. Flowering period: April to August. Elevation: 45 to 2,165 feet (15 to 660 meters).	**Not Likely to Occur.** Suitable vernal pool habitat not present. A single ephemeral pool on hardpan was found in the study area but is devoid of vegetation. This species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.

Species Name	Common Name	Status[1, 2]	Habitat, Ecology, and Life History	Potential to Occur
Romneya coulteri	Coulter's matilija poppy	--/-- CRPR 4.2	Perennial herb. Occurs in dry washes and canyons coastal scrub chaparral, often in burned areas. Found along the coastal regions from San Luis Obispo County south San Diego County and east to western Riverside and San Bernardino counties. Flowering period: March to August. Elevation: 65 to 3,900 feet (20 to 1,200 meters).	**Low.** Suitable scrub habitat for this species is present in study area. However, this species was not observed during focused spring and summer plant surveys conducted by HELIX in 2023.

[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 (CRPR): 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. CRPR Extension codes: .1–seriously endangered; .2–moderately endangered; .3–not very 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

Attachment E

2023 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for the Canyon Lake Water Treatment Plant Improvements Project

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August 14, 2023 00407.00046.001

Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Ave., Suite 250
Carlsbad, CA 92008

Subject: 2023 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for the Canyon Lake Water Treatment Plant Improvements Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey for the federally listed as threatened coastal California gnatcatcher (*Polioptila californica californica*; CAGN) conducted by HELIX Environmental Planning, Inc. (HELIX) for the Canyon Lake Water Treatment Plant Improvements Project. This report describes the methods used to perform the survey and the results. It is being submitted to the USFWS pursuant to HELIX's 10(a)(1)(A) Threatened and Endangered Species Permit (ES-778195-15) for the species.

PROJECT LOCATION

The Canyon Lake Water Treatment Plant (CLWTP) Improvements Project (Project) is primarily located in the City of Canyon Lake (City) in southwestern Riverside County, California (Figure 1, *Regional Location*). The driveway entrance to the CLWTP and approximately 300 feet of a proposed potable water pipeline along the driveway occur within the City of Lake Elsinore, Riverside County (County), California. The Project is located on the Lake Elsinore, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle, situated in Sections 2 and 3, Township 6 South, and Range 4 West (Figure 2, *USGS Topography*). The Project is directly adjacent to and includes a portion of Railroad Canyon Reservoir, referred to herein as Canyon Lake, to the north; the San Jacinto River to the east; and residential development along Via De La Valle to the south and west (Figure 3, *Location on Aerial*). The Project site is not located within the USFWS-designated critical habitat for the species.

METHODS

The survey consisted of six visits performed by HELIX permitted biologist Dane van Tamelen (ES-778195-15) between May 26 and June 30, 2023 (Table 1, *Survey Information*), in accordance with the current

USFWS protocol[1]. Additional HELIX biologists, Angelica Grunloh and Shawn Carroll, attended the surveys under the supervision and assistance of Mr. van Tamelen. The visits were conducted at least seven days apart, between 6 a.m. and 12 p.m. The survey area encompassed approximately 5.38 acres of suitable habitat within the project site and immediately surrounding suitable habitat within a 500-foot buffer, totaling approximately 27.0 acres of potentially suitable habitat for CAGN (Figure 4, *2023 Coastal California Gnatcatcher Survey Results*).

The surveys were conducted by walking within and along the perimeter of suitable CAGN habitat present within the survey area. The survey routes were arranged to ensure complete visual and audible coverage of suitable habitat for CAGN. Surveys were conducted with binoculars to aid in bird detection. Additionally, the survey routes and biologist communications during the survey visits were carefully organized to avoid duplicate counting of CAGN in the survey area. Recorded CAGN vocalizations were played sparingly and only if other means of detection had failed. If a CAGN was detected before playing recorded vocalizations, the recordings were not played. Once CAGN was initially detected in an area, the use of playback was discontinued. The approximate survey routes are depicted in Figure 4. The details of the survey dates, times, and conditions are presented in Table 1 below.

Table 1
SURVEY INFORMATION

Site Visit #	Survey Date	Biologist(s)	Start/Stop Times	Approx. Acres Surveyed/ Acres per Hour[3]	Start/Stop Weather Conditions[4]
1	5/26/2023	Dane van Tamelen[1]	0715/1115	27 ac/ 6.8 ac per hr	59°F, wind 2-5 mph, 90% cc 67°F, wind 2-7 mph, 55% cc
2	6/2/2023	Dane van Tamelen[1]	0800/1200	27 ac/ 6.8 ac per hr	61°F, wind 0-2 mph, 100% cc 70°F, wind 3-7 mph, 5% cc
3	6/9/2023	Dane van Tamelen[1] Angelica Grunloh[2]	0730/1200	27 ac/ 6.0 ac per hr	58°F, wind 3-5 mph, 100% cc 70°F, wind 2-6 mph, 0% cc
4	6/16/2023	Dane van Tamelen[1] Angelica Grunloh[2] Shawn Carroll[2]	0700/1145	27 ac/ 5.7 ac per hr	60°F, wind 0-3 mph, 100% cc 75°F, wind 2-5 mph, 5% cc
5	6/23/2023	Dane van Tamelen[1] Angelica Grunloh[2]	0700/1200	27 ac/ 5.4 ac per hr	55°F, wind 2-4 mph, 55% cc 70°F, wind 1-3 mph, 0% cc
6	6/30/2023	Dane van Tamelen[1] Angelica Grunloh[2] Shawn Carroll[2]	0700/1200	27 ac/ 5.4 ac per hr	65°F, wind 0-2 mph, 0% cc 92°F, wind 1-3 mph, 0% cc

[1] USFWS Permit ES-778195-15
[2] Supervised Individual
[3] ac – acre; hr – hour
[4] °F – degrees Fahrenheit; mph – miles per hour; % cc – percent cloud cover

[1] U.S. Fish and Wildlife Service (USFWS). 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. 5pp.

COASTAL CALIFORNIA GNATCATCHER HABITAT

Potentially suitable habitat for CAGN in the survey area consisted of two types of sage scrub: Riversidian sage scrub and encelia scrub, including the disturbed forms (Figure 4).

Sage Scrub – Riversidian Sage Scrub and Encelia Scrub (including disturbed)

The survey area supports two types of sage scrub. One is Riversidian sage scrub, which is a 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 buckwheat (*Eriogonum fasciculatum)*, brittlebush (*Encelia farinosa*), California sagebrush (*Artemisia californica*), and may also include foxtail chess (*Bromus madritensis* ssp. *Rubens*). Riversidian sage scrub within the survey area comprises co-dominant California buckwheat, California sagebrush, and brittlebush, and also includes small amounts of foxtail chess, red stem filaree (*Erodium cicutarium*), short-podded mustard (*Hirschfeldia incana*), and a variety of annual herbs and forbs. Disturbed areas of Riversidian sage scrub in the survey area have a 20 percent or higher cover from non-native species such as red stem filaree, tocalote (*Centaurea melitensis*), short-podded mustard, and other non-native annuals.

The second type of sage scrub is encelia scrub. Although classified under Sonoran desert scrub (Oberbauer 2008), the encelia scrub within the survey area functions similarly to Riversidian sage scrub as a xeric expression of sage scrub. Within the survey area, this habitat differs from Riversidian sage scrub in that it is dominated by brittlebush and has little to no relative cover from other shrubs such as California buckwheat and California sagebrush. Disturbed areas of encelia scrub have a relatively high (at least 20 percent) cover from non-native species such as red stem filaree, tocalote, short-podded mustard, and other non-native annuals.

RESULTS

Seven pairs of CAGN and one individual CAGN were detected within the survey area during the focused survey, although not all individuals were detected during each survey visit. Further, of these seven pairs of CAGN, three of the pairs were observed with juveniles (CAGN pair No. 2, No. 4, and No. 6). Two of the seven CAGN pairs (i.e., Pair No. 2 and No. 6) and one individual CAGN (CAGN No. 1) were detected within the project site. The remaining five CAGN pairs (Pair No. 1, No. 3, No. 4, No. 5, and No. 7) detected during the survey were observed within the surrounding habitat adjacent to the Project site. It should be noted that CAGN Pair No. 6 and CAGN No. 1 were also observed outside of the project site. The approximate locations of the CAGN and the number of individuals observed during each survey are presented on Figure 4. Descriptions of the CAGN observations and locations from each weekly survey are included below.

CAGN Pair No. 1 was detected off-site in the western portion of the survey area, north of the project entrance access road (Figure 4). During the first survey, the male was observed foraging and calling, the female was detected responding to the call nearby, and the male was observed chasing the female. The male was detected calling and observed foraging in the same general area during the second and third surveys. During the fifth survey, the male was detected calling and observed perched on a nearby fence, and the female was detected calling from a bush in response. Neither the male nor female were observed nor detected during the fourth or sixth surveys.

The second CAGN pair (Pair No. 2) was detected on-site within the central portion of the survey area with juvenile fledglings (Figure 4). The pair and one juvenile were detected calling and observed foraging within the same general area during the first, second, third, and fourth surveys. The female was also observed carrying nesting or feeding material during the third survey. During the fifth survey, one juvenile was observed foraging with the male, while a second juvenile was observed foraging with the female. The pair and juveniles were not detected during the sixth and final survey.

CAGN Pair No. 3 was detected in the southern portion of the survey area, immediately south of the project site. The pair was observed collecting nest material during the first survey. During the second survey, only the female was observed, while the male was detected calling from a presumed nest location. The pair was detected calling back and forth and observed foraging within the same general area during the third, fourth, and fifth surveys. During the sixth and final survey, the pair was secretive, and only one individual was detected calling within the area observed previously.

CAGN Pair No. 4 was detected off-site in the southwestern portion of the survey area, south of the project entrance access road (Figure 4). This pair was observed with two juvenile CAGN fledglings and was also observed nest building, which suggests a subsequent nesting attempt by this pair. During the first survey, the pair and both juveniles were observed vocalizing and foraging together. The pair and at least one juvenile were detected calling and observed foraging within the same general area during the second and third surveys. During the fourth survey, the male and female were observed bringing nesting material to a brittlebush immediately south of the project site entrance access road, and the two juveniles were detected calling and observed foraging nearby. During the fifth survey, the male was observed with a non-capped CAGN individual, and the male was observed chasing a California towhee (*Melozone crissalis*), which may suggest a territorial defense display for a nest location. During the sixth and final survey, the male was observed foraging in the same general area, and a non-capped CAGN individual was observed perched on a nearby fence to the north.

The fifth CAGN pair (Pair No. 5) was detected in the northwestern portion of the survey area, approximately 200 feet north of the project site entrance access road (Figure 4). The pair was observed foraging and calling during the first survey. During the second survey, only the female was observed foraging within habitat along the same slope; and only the male was detected calling and observed foraging within nearby habitat during the third survey. One CAGN was detected calling within the same general area during the fourth survey. During the fifth survey, one CAGN individual was detected calling and briefly observed, but the gender and age could not be determined. During the sixth and final survey visit, one non-capped CAGN individual was observed foraging nearby in the same general area as observed during previous visits.

CAGN Pair No. 6 was detected in the northeastern portion of the project site as well as within habitat immediately north of the project site (Figure 4). During the survey visits, this pair was observed with two juvenile CAGN fledglings. A female and one juvenile were observed foraging together within the project site during the first survey. One CAGN individual was detected calling in the same general area during the second survey, while another individual was detected calling approximately 200 feet west of the project site. During the third survey, the male and female were observed foraging nearby and bringing nesting material to a California buckwheat bush on-site. During the fourth survey, a juvenile was observed perched on a gate fence off-site and exhibiting food-begging behavior to the female. During the fifth survey, the pair was observed foraging along the slope west of the site and returning to the presumed nest location on-site, where vocalizations from at least two juveniles were detected. The pair

and two juveniles were detected calling and observed foraging in the same general area on-site during the sixth and final survey.

CAGN Pair No. 7 was also detected in suitable habitat approximately 450 feet from the project site, in the northwestern portion of the survey area (Figure 4). The pair was detected calling back and forth during the first and second surveys. During the third survey, one individual was observed from afar while the other was detected calling. Only one individual was detected calling from the same general area during the fourth survey. During the fifth survey, the pair was observed flying from the northern portion of the survey area to an area outside of the survey area to the north. One individual was detected calling from the same general area during the sixth and final survey.

In addition to the seven CAGN pairs, a single non-capped CAGN individual (CAGN No. 1) was detected in the eastern portion of the site (Figure 4). During the survey, this CAGN was also observed using habitat off-site in the eastern portion of the survey area. The individual was not detected during the first survey but was observed during all the subsequent five survey visits.

CERTIFICATION

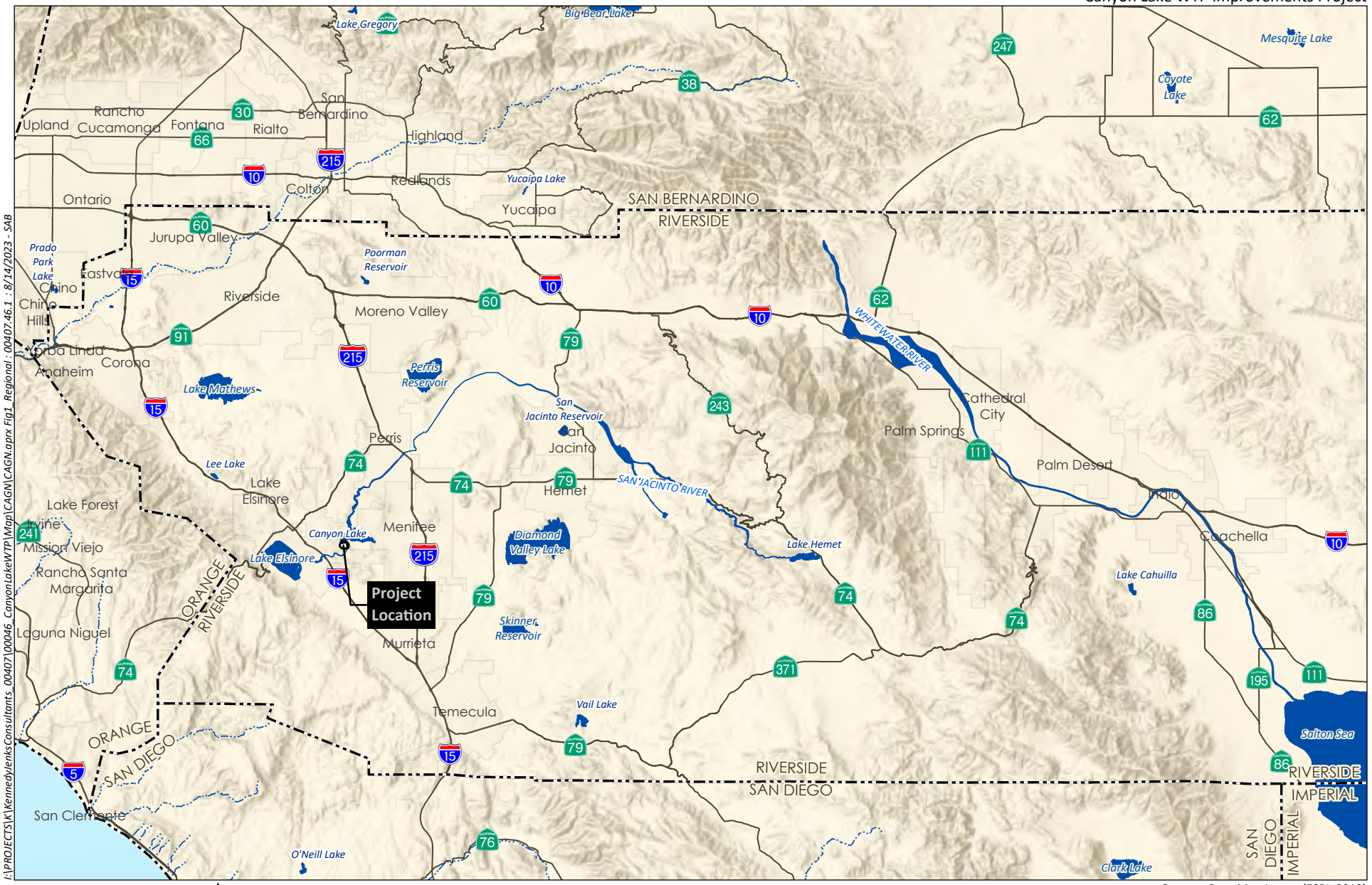
I certify that the information in this survey report and enclosed exhibit fully and accurately represent my work. Please contact Shelby Howard or Thomas Liddicoat at (619) 462-1515 if you have any questions.

Sincerely,

Dane van Tamelen
Biologist
(ES-778195-15)

Attachments:

Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Location on Aerial
Figure 4: 2023 Coastal California Gnatcatcher Survey Results



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Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1



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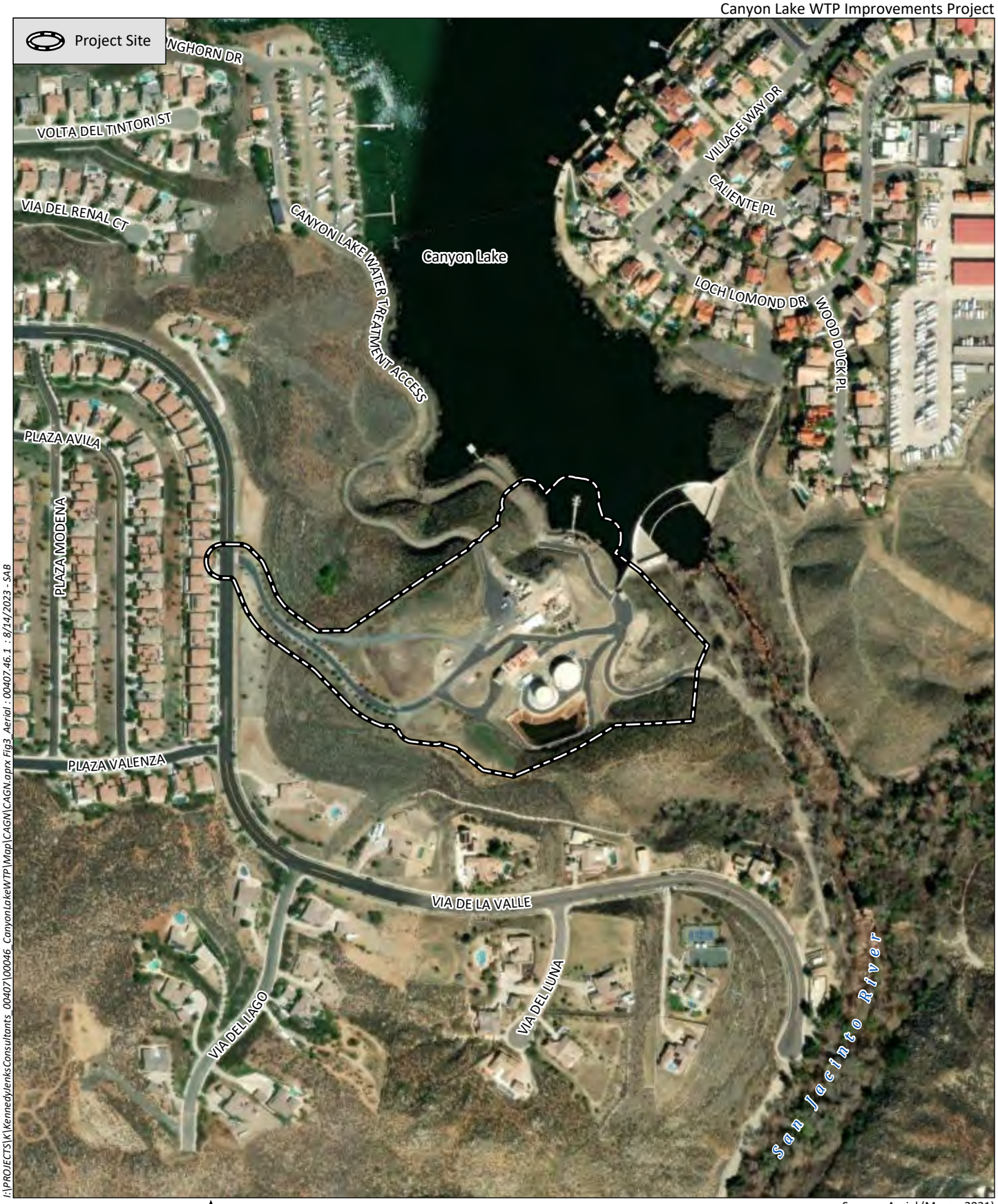
0 2,000 Feet

Source: LAKE ELSINORE 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2



0 400 Feet

Source: Aerial (Maxar, 2021)

HELIX Environmental Planning

Location on Aerial

Figure 3



I:\PROJECTS\K\KennedyJenks-Consultants_00407\00046_CanyonLakeWTP\Map\CAGN\CAGN.aprx Fig4_CAGNRes - CAGNRes : 00407.46.1 : 8/14/2023 - SAB

0 250 Feet

Source: Aerial (County of Riverside, 2020)

HELIX Environmental Planning

2023 Coastal California Gnatcatcher Survey Results

Figure 4

Attachment F

Special Status Animal Species with Potential to Occur

Species	Status[1]	Habitat Associations	Potential to Occur
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*.	**None:** Suitable food plants are present in the area, but the proximity of Canyon Lake, San Jacinto River, and the water treatment plant result in the habitat not being the dry habitat preferred by the species. The rocky habitat is not friable and abandoned rodent dens are not present.
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*], and 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.	**None:** The host and nectar plants required for this species are not present in study area.
Crustaceans			
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.	**None.** One ephemeral pool was observed in the study area, on disturbed rocky soils (hardpan) and devoid of vegetation. When filled to maximum capacity this pool is shallow and would be approximately 15 centimeters deep at the maximum. Based on field surveys by HELIX in 2023, this pool was found dry within two weeks following ponding. This very limited ponding (during above average rainfall season of 2023) is not sufficient to support this species.

Species	Status[1]	Habitat Associations	Potential to Occur
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.	**Low**: Suitable habitat occurs within and adjacent to study area consisting of streams and riparian habitats. However, the on-site habitats for this species consist of a single disturbed ephemeral pool. Based on field surveys by HELIX in 2023, this pool was found dry within two weeks following ponding. This very limited ponding (during above average rainfall season of 2023) is not sufficient to support this species.
Reptiles			
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.	**None:** Suitable vegetation habitat present on-site; however appropriate soils for easy burrowing not present in study area.
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:** Suitable habitat occurs in the study area. This species was observed within suitable scrub in the study area during focused USFWS protocol surveys for coastal California gnatcatcher conducted by HELIX in 2023**.**
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.	**Moderate**: Suitable sage scrub habitat occurs in the study area. Species was not observed during various biological surveys of the study area conducted by HELIX in 2023

Species	Status[1]	Habitat Associations	Potential to Occur
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.	**Low**: Suitable vegetation habitat occurs in the study area; however, the site has rocky soils, large rock outcrops do not occur, and low potential for small mammal prey species due to soils that are not friable.
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*).	**None**: Suitable vegetation habitat present in the study area; however, loose sandy soils do not occur in study area. Soils on-site are highly rocky; prey species (ants) observed but in small amounts.
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.	**Low:** Suitable vegetation habitat is present in the study area; however, low potential for small mammal prey species due to soils that are not friable. Suitable habitat and refuge area for this species may be present off-site along the San Jacinto River and adjacent habitats.
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.	**Low**: Marginally suitable foraging habitat for this species is present within the study area. No trees on-site that would support nesting. Potentially suitable nesting and foraging habitat occurs adjacent to the study area along the San Jacinto River. This species was not observed during biological surveys of the study area conducted by HELIX in 2023.

Species	Status[1]	Habitat Associations	Potential to Occur
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. 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.	**Present:** Suitable habitat occurs in the study area. This species was observed within suitable scrub in the study area during focused USFWS protocol surveys for coastal California gnatcatcher conducted by HELIX in 2023**.**
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**: Marginally suitable foraging habitat occurs adjacent to the study area but is surrounded by development. Species typically avoids populated areas. This species was not observed during biological surveys of the study area conducted by HELIX in 2023.
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.	**Present:** Suitable habitat occurs in the study area. This species was observed within suitable scrub in the study area during focused USFWS protocol surveys for coastal California gnatcatcher conducted by HELIX in 2023**..**
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.	**None**: Soils in the study area are rocky and not suitable for creating burrows. California ground squirrel not observed. Suitable burrows not observed in study area.

Species	Status[1]	Habitat Associations	Potential to Occur
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.	**None**: Habitat on site is primarily a mix of sage scrub and developed land with moderately steep slopes. Not typical or suitable habitat for this species.
western snowy plover *(Charadrius nivosus nivosus)*	FT, BCC/SSC	Breeds and winters along the coast of California. Nesting habitat includes sand spits, dune-backed beaches, beaches at creek and river mouths, and salt pans at lagoons and estuaries within 50 miles of the ocean. Prefers sand, silt, or dry mud with even surface, avoiding rocky or broken ground. Exhibits high breeding site fidelity. In winter, found on many of the beaches used for nesting, as well as others where they do not nest. Also occurs in constructed salt ponds and on estuarine sand and mud flats.	**None.** Beaches and other suitable sandy habitat do not occur in study area. Species avoids the rocky ground present in study area.
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.	**Low:** Marginally suitable foraging habitat for this species is present within the study area. No trees on-site that would support nesting. Potentially suitable nesting and foraging habitat occurs nearby along San Jacinto River. Developed and sage scrub habitat in study area not typically habitat for species to forage. This species was not observed during biological surveys of the study area conducted by HELIX in 2023.
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.	**None**: Suitable open grassland habitat does not occur in study area.
Yellow-breasted Chat *Icteria virens*	--/SSC	In California, occurs as a migrant and summer resident breeding from the coastal regions in northern California, east of the Cascades, and throughout the central and southern portions of the state. Breeds in early successional riparian habitats with well-developed shrub layer and an open canopy nesting on the borders of streams, creeks, rivers, and marshes.	**Low:** Habitat suitable for species occurs off-site adjacent in San Jacinto River. Low potential habitat within the study area along lake shoreline. This species was not observed during biological surveys of the study area conducted by HELIX in 2023.

Species	Status[1]	Habitat Associations	Potential to Occur
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.	**Low**: Species can occupy a variety of habitat but generally prefers habitat with open areas. Vegetation in the study area is relatively dense and not typically preferred by this species., but relatively small open patches do occur. This species was not observed during biological surveys of the study area conducted by HELIX in 2023.
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.	**None:** Suitable emergent wetlands habitat not present within the study area. Habitat in study area changes from upland to open water along a moderately steep shoreline and lacks appropriate habitat for species.
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.	**Present**: Suitable habitat occurs in the study area. This species was observed within suitable scrub in the study area. Focused USFWS protocol survey for this species was conducted by HELIX in 2023; surveys were positive.

Species	Status[1]	Habitat Associations	Potential to Occur
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.	**Low**: Potential habitat does not occur in study area. Suitable habitat occurs adjacent to study area along San Jacinto River. The riparian woodland that does occur in the study area is a small one tree wide stand along the lake shoreline and does not constitute typically suitable habitat for species. This species was not observed during biological surveys of the study area conducted by HELIX in 2023.
Mammals			
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.	**None**: This species may forage within the study area; however, suitable roosting habitat to support this species does not occur in study area.
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.	**Low:** Suitable habitat is present adjacent to study area along San Jacinto River. This species may forage in the study area.

Species	Status[1]	Habitat Associations	Potential to Occur
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.	**Low**: Suitable sage scrub vegetation habitat within the study area, but soils are extremely rocky and not friable for burrows by this species.
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)	--/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.	**Low**: Suitable sage scrub vegetation habitat within the study area, but soils are extremely rocky and not friable for burrows by this species.
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 up to 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.	**None**: Suitable open sage scrub or grassland vegetation habitat not present in study area. The vegetation in the study area has relatively dense cover and is on moderate slopes. The soils in the study area are extremely rocky and not friable for burrows by this species.
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.	**None**: Suitable open sage scrub or grassland vegetation habitat not present in study area. The vegetation in the study area has relatively dense cover and is on moderate slopes. The soils in the study area are extremely rocky and not friable for burrows by this species.

Species	Status[1]	Habitat Associations	Potential to Occur
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.	**None**: Suitable desert habitat does not occur in study area as soils are rocky and not friable for burrows by this species. Sage scrub cover is relatively dense.
Los Angeles pocket mouse (Perognathus longimembris brevinasus)	--/SSC	Historically occurred from the San Fernando Valley of Los Angeles County east to Cabazon in the San Gorgonio Pass and southeast to north-central San Diego County. Possibly intergrades with the Palm Springs pocket mouse in San Felipe Valley. Found in sandy washes, grasslands, disturbed sage scrub, and oak woodland habitats.	**None**: Suitable open sage scrub or grassland vegetation habitat not present in study area. The vegetation in the study area has relatively dense cover and is on moderate slopes. The soils in the study area are extremely rocky and not friable for burrows by this species.
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.	**Low**: Suitable vegetation occurs in the study area; but sage scrub habitat present has a high density of shrubs, which is not typically preferred by this species.

[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.

None - 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/or 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

Attachment G

Status Codes

FEDERAL AND STATE CODES

U.S. Fish and Wildlife Service (USFWS)

BCC Bird of Conservation Concern
FE Federally listed endangered
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
SE	State listed endangered
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.

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).

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.

Attachment H

IPaC Report

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

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Project information

NAME

Canyon Lake Water Treatment Improvements Project

LOCATION

Riverside County, California



DESCRIPTION

None

Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

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Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of

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Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
San Bernardino Merriam's Kangaroo Rat Dipodomys merriami parvus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2060	Endangered
Stephens' Kangaroo Rat Dipodomys stephensi (incl. D. cascus) Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3495	Threatened

Birds

NAME	STATUS
Coastal California Gnatcatcher Polioptila californica californica Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo Vireo bellii pusillus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher Empidonax traillii extimus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6749	Endangered

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Western Snowy Plover Charadrius nivosus nivosus — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/8035

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Quino Checkerspot Butterfly Euphydryas editha quino (=E. e. wrighti) Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5900	Endangered

Crustaceans

NAME	STATUS
Riverside Fairy Shrimp Streptocephalus woottoni Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8148	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
California Orcutt Grass Orcuttia californica Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4923	Endangered

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Munz's Onion Allium munzii — Endangered
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2951

San Diego Ambrosia Ambrosia pumila — Endangered
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/8287

San Jacinto Valley Crownscale Atriplex coronata var. notatior — Endangered
Wherever found
There is **final** critical habitat for this species. However, no *actual* acres or miles were designated due to exemptions or exclusions. See Federal Register publication for details.
https://ecos.fws.gov/ecp/species/4353

Spreading Navarretia Navarretia fossalis — Threatened
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/1334

Thread-leaved Brodiaea Brodiaea filifolia — Threatened
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/6087

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Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON

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Allen's Hummingbird Selasphorus sasin — Breeds Feb 1 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9637

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Belding's Savannah Sparrow Passerculus sandwichensis beldingi — Breeds Apr 1 to Aug 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8

Bullock's Oriole Icterus bullockii — Breeds Mar 21 to Jul 25
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

California Gull Larus californicus — Breeds Mar 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

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Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

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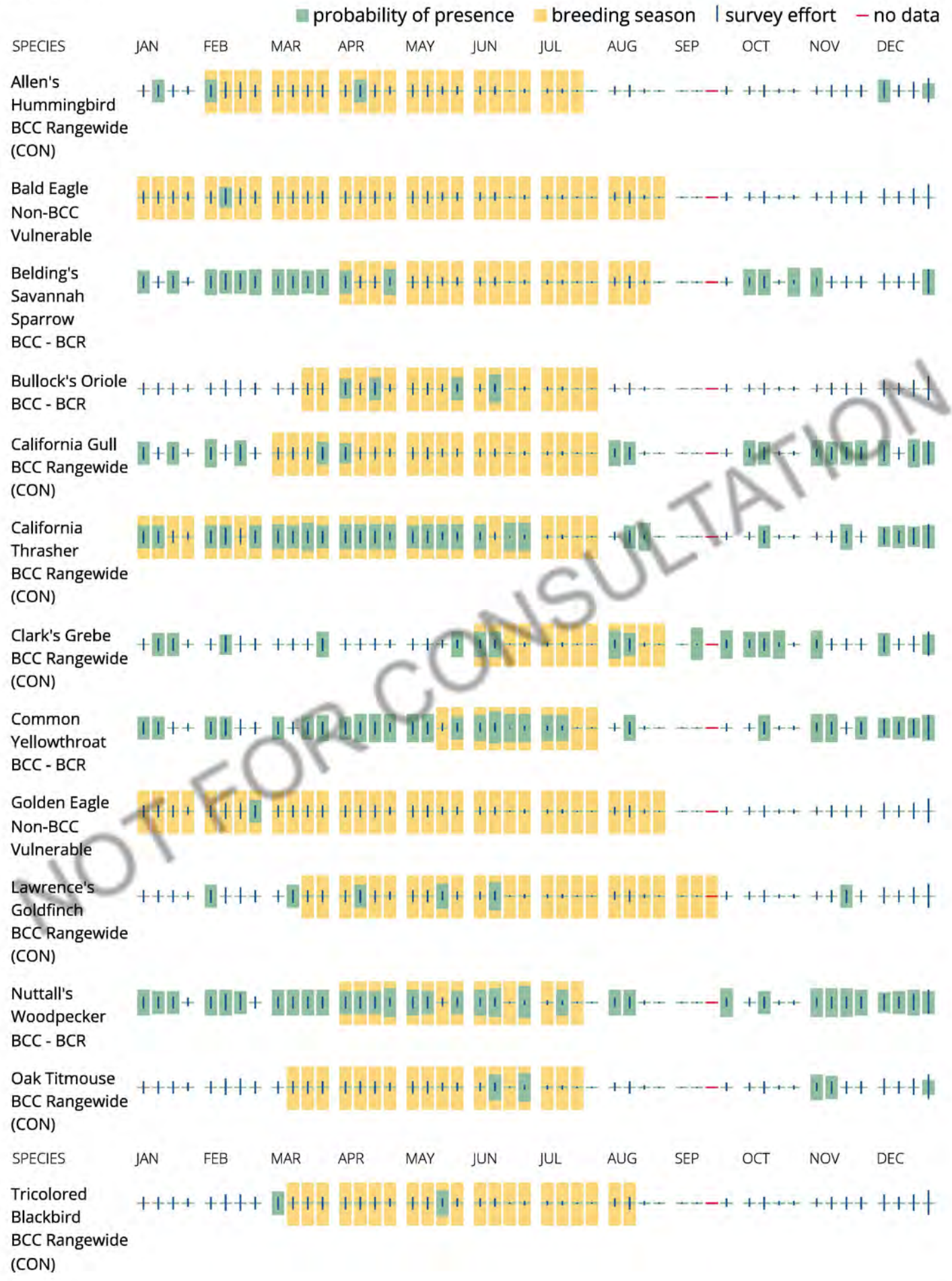

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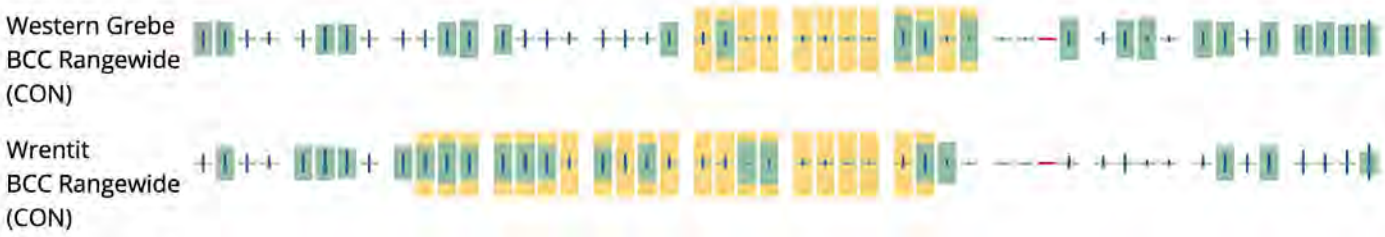

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

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To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability

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of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

NOT FOR CONSULTATION

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Appendix C

Historical Resources Evaluation Report

Canyon Lake Water Treatment Plant Phase I Improvements Project

Historical Resource Evaluation Report

September 2023 | 00407.00046.00

Prepared for:

Elsinore Valley Municipal Water District
31315 Chaney Street
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Prepared by:

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National Archaeological Database Information

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Firm:	HELIX Environmental Planning, Inc.
Client/Project:	Kennedy/Jenks Consulting, Inc. / Canyon Lake Water Treatment Plant Phase 1 Improvements Project
Report Date:	September 2023
Report Title:	Historical Resource Evaluation Report for the Canyon Lake Water Treatment Plant Phase 1 Improvements Project, Canyon Lake, California
Submitted to:	State Water Resources Control Board and Elsinore Valley Municipal Water District
Type of Study:	Historical Resource Evaluation Report
New Sites:	None
Updated Sites:	None
USGS Quad:	Lake Elsinore 7.5' Quadrangle
Key Words:	Riverside County; Lake Elsinore; Canyon Lake; Railroad Canyon; no historic properties/historical resources

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ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
AMSL	above mean sea level
APE	Area of Potential Effects
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
CLWTP	Canyon Lake Water Treatment Plant
CRHR	California Register of Historical Resources
EIC	Eastern Information Center
EVMWD	Elsinore Valley Municipal Water District
FMP	Final Facilities Master Plan, Canyon Lake Water Treatment Plant
HELIX	HELIX Environmental Planning, Inc.
I-	Interstate
MG	million gallons
Metropolitan	Metropolitan Water District of Southern California
MWD	Metropolitan Water District of Southern California
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
OHP	Office of Historic Preservation
Pechanga	Pechanga Band of Indians
PRC	Public Resources Code
project	Canyon Lake Water Treatment Plant Phase 1 Improvements Project
SHPO	State Historic Preservation Officer
Soboba	Soboba Band of Luiseño Indians
SWRCB	State Water Resources Control Board
THPO	Tribal Historic Preservation Officer
TWC	Temescal Water Company
USGS	U.S. Geological Survey

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EXECUTIVE SUMMARY

Kennedy/Jenks Consulting, Inc. contracted HELIX Environmental Planning, Inc. (HELIX) to provide cultural resource services for the Historical Resource Evaluation Report for the Canyon Lake Water Treatment Plant Phase 1 Improvements Project (project) in the City of Canyon Lake, Riverside County, California. The project is the first phase of improvements for the Canyon Lake Water Treatment Plant (CLWTP) identified in the Elsinore Valley Municipal Water District (EVMWD) 2017 Integrated Resources Plan and 2018 Facilities Master Plan to support the agency's long-term water supply strategy. As they relate to potentially historic existing structures, these improvements include the removal and replacement of intake pumps and pipes, static mixer, rapid mixer, flocculation/sedimentation basin and up-flow clarifier, and chemical feed building and area 1 facilities.

A historical resources evaluation was conducted to determine if any of the structures over 45 years in age that will be affected by the project are considered historic resources. This report details the methods and results of the study. HELIX's Senior Architectural Historical conducted a literature review and archival research, a review of historic aerials and maps, and a site visit to photograph key structures. A desktop review of additional photographs from the cultural resources pedestrian survey was also conducted.

EVMWD is seeking funding from the Drinking Water State Revolving Fund. As such, the project is subject to review by the State Water Resources Control Board (SWRCB). Thus, this historical resources evaluation report addresses the requirements of both the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

None of the structures evaluated meet the eligibility criteria of the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). Therefore, HELIX recommends that there are no historical resources under CEQA and no historic properties under Section 106 of the NHPA that would require consideration during project implementation.

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1.0 INTRODUCTION

Kennedy/Jenks Consulting, Inc. contracted HELIX Environmental Planning, Inc. (HELIX) to provide historical resource evaluation services for the Canyon Lake Water Treatment Plant (CLWTP) Phase 1 Improvements Project (project) in the City of Canyon Lake, Riverside County, California. The project is the first phase of improvements identified in the Elsinore Valley Municipal Water District (EVMWD) 2017 Integrated Resources Plan and 2018 Facilities Master Plan to support the agency's long-term water supply strategy. A historical resource evaluation, including a records search, literature review, a review of historic aerial photographs and maps, and a site visit, was conducted for the project area. EVMWD is seeking funding from the Drinking Water State Revolving Fund. As such, the project is subject to review by the State Water Resources Control Board (SWRCB). Thus, this report details the methods and results of historical resource evaluation and has been prepared to comply with the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, to meet the requirements of CEQA Plus.

1.1 PROJECT LOCATION

The Canyon Lake Water Treatment Plant is located east of Interstate (I-) 15 and west of I-215 in the City of Canyon Lake in western Riverside County (Figure 1, *Regional Location*). It is located Sections 2 and 3 of Township 6 South, Range 4 West, on the U.S. Geological Survey (USGS) 7.5' Lake Elsinore quadrangle (Figure 2, *USGS Topography*). The project site is bordered by Via De La Valle to the south and west, Canyon Lake to the north, and the outlet of the Canyon Lake dam outlet to the east (Figure 3, *Area of Potential Effects*). It sits on the edge of the City of Canyon Lake and borders the City of Lake Elsinore on the southern end of Canyon Lake. The site can be accessed via Longhorn Drive or Via De La Valle, which connect to Old Newport Road and the access roads through the treatment plant. The overall CLWTP site is approximately 12.6 acres, or 548,300 square feet.

1.2 PROJECT DESCRIPTION

EVMWD is a public utility, created on December 23, 1950, under the Municipal Water District Act of 1911. EVMWD provides public water service, water supply development and planning, wastewater treatment and disposal, and recycling. Currently, EVMWD has over 46,000 water, wastewater, and agricultural service connections over a 96-square-mile service area within the cities of Lake Elsinore, Wildomar, Canyon Lake, and Murrieta, and unincorporated portions of the County of Riverside. EVMWD is a sub-agency of the Western Municipal Water District, a member agency of the Metropolitan Water District of Southern California (Metropolitan; MWD). EVMWD owns and operates the CLWTP, which supplies roughly 10 to 13 percent of EVMWD's local water supply.

The CLWTP was initially constructed in 1957 adjacent to the Railroad Canyon Dam and Railroad Canyon Reservoir (colloquially known as Canyon Lake) as a conventional surface water treatment facility with a treatment process that included sulfuric acid and ferric sulfate addition for enhanced coagulation, a single up-flow clarifier, anthracite/sand dual media filtration, free chlorination through filtration, ultraviolet disinfection, and chloramination. Modifications and upgrades to the CLWTP have been made over time. Figure 4, *Water Treatment Plant Existing Structures*, shows the overall facility, with individual components labeled. The project proposes additional upgrades that affect existing, potentially historic structures, summarized below.

- Intake Pumps – remove and replace the existing pump station, including the intake pumps on the floating barge, electrical building, chemical injection and manifold structure, and raw water pipeline

- Static and Rapid Mix Systems – remove and replace the existing static and rapid mix equipment, including rapid mix chamber, vertical mixer, 30-inch diameter in-line static mixer, motor, and gearbox with shaft and impeller

- Up-flow Clarifier and basin – remove the existing up-flow clarifier and replace it with a flocculation and sedimentation basin system that will separate and remove suspended solids within water treatment cycles.

- Sodium Hypochlorite Storage and Feed System – Remove the existing feed system within the filter gallery below the chlorine feed area and filter building due to delivery accessibility concerns, and replace it with a new feed system

- Chemical Feed Area 1 – Remove the existing building and chemical feed system for potassium permanganate, ferric sulfate, sulfuric acid, poly-aluminum chloride, cationic polymer, and caustic soda, and relocate to a centralized chemical feed location

- Chemical Feed Area 2 – Modify the existing building to install a new heating, ventilation, and air-conditioning (HVAC) system to keep sodium hypochlorite concentrations stable year-round, as well as remote fill stations for sodium hypochlorite and ammonia

No changes are proposed to the rest of the existing buildings and structures, which are listed below with their construction dates according to record drawings and/or the Facilities Master Plan:

- Media Filters and Filter Building (1995)

- Ultraviolet Disinfection System (circa 2009)

- 0.25 MG Chlorine Contact Tank (2005)

- Filter Backwash Pumps (1995)

- 1 MG Clearwell Tank (2005)

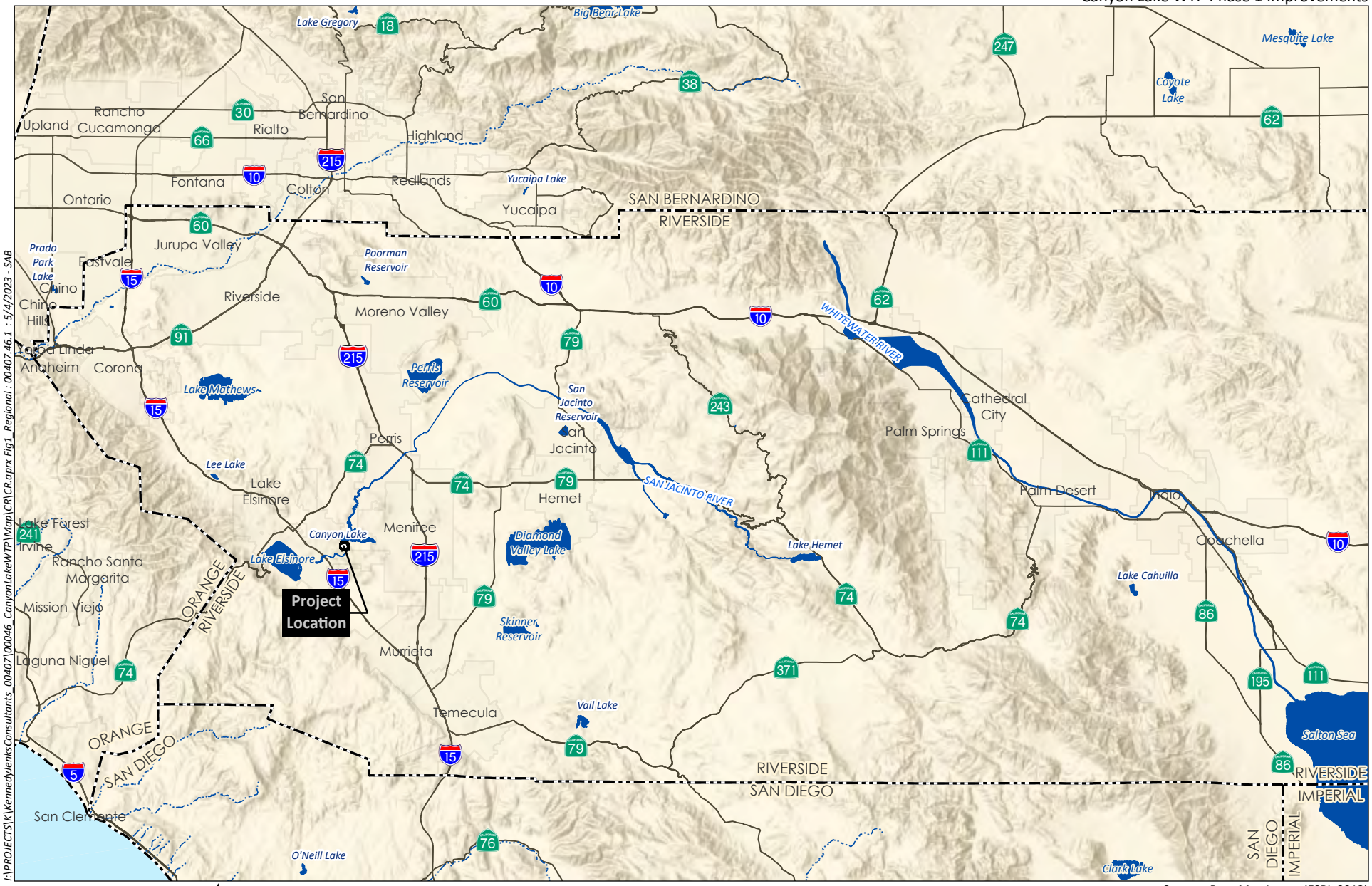
- Decant Pond (1995)

- Operations Modular Building (circa 2004)

1.3 REGULATORY FRAMEWORK

1.3.1 National Historic Preservation Act

Section 106 of the National Historic Preservation Act of 1966 requires federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in regulations issued by the ACHP. Revised regulations,



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0 10 Miles

Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1



I:\PROJECTS\K\KennedyJenksConsultants_00407\00046_CanyonLakeWTP\Map\CR\CR.aprx Fig2_USGS : 00407.46.1 : 5/4/2023 - SAB

0 2,000 Feet

Source: LAKE ELSINORE 7.5' Quad (USGS)

HELIX Environmental Planning

Project Location (USGS Topography)

Figure 2

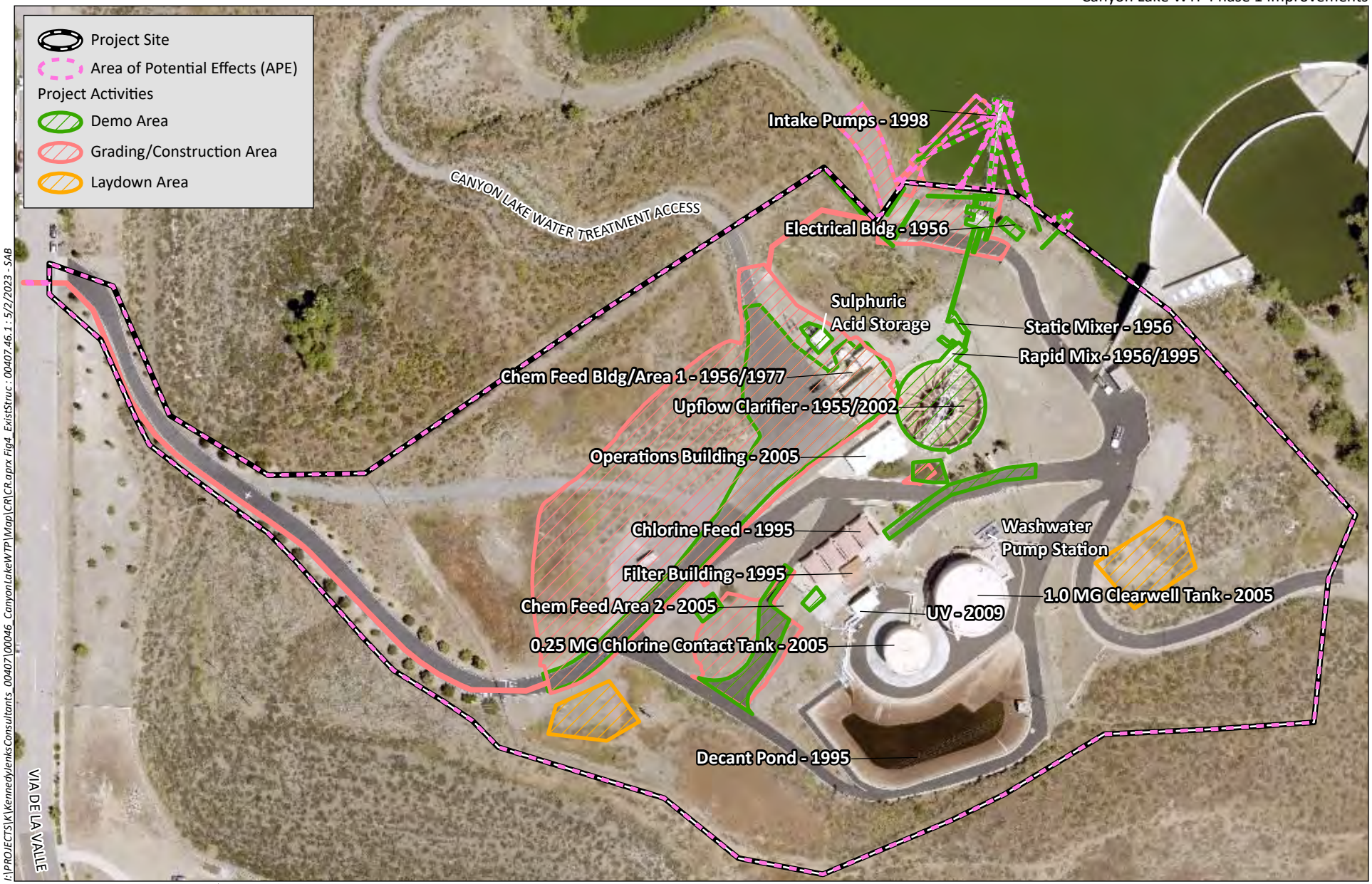


Source: Aerial (County of Riverside, 2020)

HELIX Environmental Planning

Area of Potential Effects

Figure 3



Source: Aerial (County of Riverside, 2020)

HELIX Environmental Planning

Water Treatment Plant Existing Structures

Figure 4

"Protection of Historic Properties" (36 Code of Federal Regulations [CFR] Part 800), became effective August 5, 2004. In the case of this project, the SWRCB, as the funding agency, must abide by the requirements of Section 106 and consult with the State Historic Preservation Officer (SHPO).

Historic properties are properties that are included in the National Register of Historic Places (NRHP/National Register) or those that meet the criteria for inclusion in the NRHP, as outlined below. If the agency's undertaking could affect historic properties, the agency determines the scope of appropriate identification efforts and then proceeds to identify historic properties in the Area of Potential Effects (APE). The agency reviews background information, consults with the SHPO or Tribal Historic Preservation Officer (THPO) and others, seeks information from knowledgeable parties, and conducts additional studies, as necessary. Districts, sites, buildings, structures, and objects listed in the National Register are considered; unlisted properties are evaluated against the National Park Service's published criteria in consultation with the SHPO/THPO and any Indian tribe or Native Hawaiian organization that may attach religious or cultural importance to them.

Section 106 review gives equal consideration to properties that have been included in the NRHP and those that have not been but meet NRHP criteria. Section 60.6 of 36 CFR Part 60 presents the criteria for the evaluation of cultural resources for nomination to the NRHP as follows:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, and association, and

a. That are associated with events that have made a significant contribution to the broad patterns of our history; or

b. That are associated with the lives of persons significant in our past; or

c. That embody the distinctive characteristics of a type, period or method or construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d. That have yielded, or may be likely to yield, information important in prehistory or history [36 CFR Part 60].

1.3.2 California Environmental Quality Act

Under the CEQA, any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (CRHR) (Public Resources Code [PRC] §5024.1, Title 14 California Code of Regulations [CCR] Section 4852), including the following:

A (1): Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

B (2): Is associated with the lives of persons important in our past;

C (3): Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values, or:

D (4): Has yielded, or may be likely to yield, information important in prehistory or history.

Cultural resources eligible for the CRHR are considered significant resources (historical resources) and impacts to them are significant environmental effects under CEQA.

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 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 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.

1.4 AREA OF POTENTIAL EFFECT

Pursuant to 36 CFR 800.4(a)(1), the Area of Potential Effect (APE) is the geographic area within which an undertaking may directly or indirectly alter the character or use of historic properties. The APE for the CLWTP project consists of the area in which project activities will occur, including access, laydown areas, demolition, and grading/construction areas, as illustrated in Figures 3 and 4.

1.5 PROJECT PERSONNEL

HELIX's Senior Architectural Historical, Teri Delcamp, M.A., conducted the research and site visit, and is the primary author of this technical report. Ms. Delcamp meets the Secretary of the Interior's Professional Qualification Standards for Architectural History and History. Mary Robbins-Wade, M.A., RPA, provided overall project management support and senior technical review. Theodore G. Cooley, M.A., RPA, Trevor Gittelhough, M.A., RPA, and James Turner, M.A., RPA, all contributed to the report as well, providing sections on regulatory framework, natural and cultural setting, background information, etc. Resumes of key HELIX personnel are included as Appendix A.

2.0 PROJECT SETTING

2.1 NATURAL SETTING

The study area is situated in western Riverside County along the southern shoreline of the artificially created Canyon Lake Reservoir. The climate of western Riverside County is characterized as a semi-arid environment with low humidity and rainfall. Almost all rainfall occurs in the winter, but the region can also experience rare, intense summer thunderstorms. Wind is also a strong feature of this climatic regime, with dry winds in excess of 25 miles per hour in the late winter and early spring (NOAA 2020). The project site is sloped, with steeper slopes to the north and west and gentle slopes throughout most of the project site, with an elevation of approximately 1,400 to 1,500 feet above mean sea level (AMSL). Currently, the project vicinity is characterized predominantly by a mixture of open land, with adjacent urban development comprised mostly of residential development and associated transportation infrastructure. Canyon Lake is located immediately north of the project.

Geologically, the study area is underlain by Mesozoic phyllite deposits, while immediately adjacent to the study area to the south is Cretaceous, undifferentiated granodiorite (Morton and Weber n.d.). There is a small pocket of very old, middle to early Pleistocene, alluvial channel deposits to the northwest and northeast, with more likely underneath the Canyon Lake Reservoir, which consist of fluvial sediments consisting of moderately to well-indurated, reddish-brown alluvium (Morton and Weber n.d.). The adjacent Santa Ana and Elsinore mountains to the west consist mostly of granitic rocks dating to the Cretaceous Period, and metavolcanics and metasedimentary rocks of the Bedford Canyon Formation, dating to the Jurassic Period (Morton and Weber n.d.; Rogers 1965).

Three soil series are mapped for the study area: Lodo, rocky loam, 25 to 50 percent slopes, 8 to 15 percent slopes, and 15 to 25 percent slopes; Fallbrook, rocky sandy loam, 8 to 15 percent slopes; and Soboba stony loamy sand, 2 to 15 percent slopes. The Lodo soils predominate in the study area, while the Fallbrook and Soboba soils are concentrated along the San Jacinto River. The Lodo soil series consists of shallow, excessively drained soils formed from weathered shale and sandstone; the Soboba soil series consists of deep, excessively drained soils formed in alluvium from granitic sources; and the Fallbrook soil series consists of deep, well-drained soils formed from granitic rocks (Natural Resources Conservation Service 2022.). The majority of the surface soils of the project site are undisturbed, outside of the immediate areas around the dam, reservoir, and water treatment plant.

Prehistorically, the natural vegetation in the project vicinity likely consisted of portions of riparian and/or freshwater vegetation along the San Jacinto River and mostly coastal sage scrub and native grassland in adjacent hill areas, with chaparral in the upper elevations of the adjacent mountains. Riparian vegetation includes plants such as western sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), coast live oak (*Quercus agrifolia*), and willow (*Salix* sp.). Plants common to freshwater marsh include reed grass (*Phragmites australis*), marsh mallow (*Kosteletzkya virginic*), soft rush (*Juncus effusus*), pickerelweed (*Pontederia cordata*), narrow-leaved cattail (*Typha angustifolia*), and button bush (*Cephalanthus occidental*). Native grassland plants include *Stipa, Elymus, Poa,* and *Muhlenbergia*. Plants of the coastal sage scrub community include 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 (*Bahiopsis laciniata*), golden-yarrow (*Eriophyllum confertiflorum*), sawtooth goldenbush (*Hazardia squarrosa*), yucca (*Yucca schidigera*, *Hesperoyucca whipplei*), prickly pear cactus (*Opuntia* sp.),

and scrub oak (*Quercus dumosa*) (Hall 2007; Munz 1974). Major wildlife species found in this environment prehistorically were coyote (*Canis latrans*); mule deer (*Odocoileus hemionus*); grizzly bear (*Ursus arctos*); mountain lion (*Puma concolor*); desert cottontail (*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). Desert cottontails, jackrabbits, and rodents were very important to the prehistoric diet; deer were somewhat less significant for food, but were an important source of leather, bone, and antler. Many of the plant and animal species naturally occurring in the project vicinity are known to have been used by native populations for food, medicine, tools, ceremonial, and other uses (Bean and Saubel 1972; Bean and Shipek 1978; Christenson 1990; Hedges and Beresford 1986; Luomala 1978; Sparkman 1908). The San Jacinto River and its numerous tributaries would likely have made fresh water easily accessible to native populations living in the area.

2.2 HISTORIC SETTING

The ethnographic and pre-contact history of the area is described in detail in the Cultural Resources Survey for Canyon Lake Water Treatment Plant Phase 1 Improvements Project (Robbins-Wade et al. 2023).

2.2.1 Spanish Period

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 this area, the Spanish missions did not have as direct and immediate an effect on the people as they did on the Luiseño who lived along the coast. 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 1979; 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.

2.2.2 Mexican Period

Mexico, including Alta California, gained its independence from Spain in 1821, but Spanish culture and influence remained as the missions continued to operate as they had in the past, and laws governing the distribution of land were also retained for a period of time.

Following the secularization of the missions in 1834, large ranchos were granted to prominent and well-connected individuals. The society made 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 numerous new ranchos, cattle ranching expanded and prevailed over agricultural activities. These ranches put new pressures on California's native populations, as grants were made for inland areas still occupied by the Native people, forcing them to acculturate or relocate farther into the backcountry. In rare instances, former mission neophytes were able to organize pueblos and attempt to live within the new confines of Mexican governance and culture.

The area south and west of the project area was encompassed by Rancho La Laguna, an approximately 14,000-acre rancho granted to Julian Manriquez by Governor Manuel Micheltorena (Hoffman 1862). Little is known about Manriquez; in 1851, Manriquez sold the rancho to Abel Stearns (U.S. District Court 1851).

2.2.3 American Period

The Mexican period ended when Mexico ceded California to the United States after the Mexican-American War (1846–1848), which concluded with the Treaty of Guadalupe Hidalgo. A great influx of settlers to California and the San Diego and Riverside County region occurred during the American Period, resulting from several factors, including the discovery of gold in the state in 1848, the end of the Civil War, the availability of free land through the passage of the Homestead Act in 1862, and later, the importance of the region as an agricultural area supported by roads, irrigation systems, and connecting railways. The increase in American and European populations quickly overwhelmed many of the Spanish and Mexican cultural traditions, and greatly increased the rate of population decline among Native American communities.

Initially, southern California was divided into only two counties: Los Angeles and San Diego. In 1853, San Bernardino County was added, placing what is now Riverside County primarily within San Diego County and partially within San Bernardino County. Riverside County was created from portions of San Bernardino and San Diego counties in 1893.

Abel Stearns, born in Massachusetts in 1798, moved to Mexico City in 1826 and later became a naturalized citizen (Brigandi 2011). In 1829, he moved to California and settled in Los Angeles, where he served as a middleman between trading ships and ranchos. In 1841, he married 14-year-old Arcadia Bandini, and in the next year, he purchased the Los Alamitos Rancho and shifted his focus to raising cattle. During this time, the area that would become Riverside County was dominated by cattle and orange groves (Brigandi 2011; Lech 2004). Stearns filed a claim for Rancho La Laguna to the Public Land Commission in 1851 and later patented the land in September 1872 (Willey 1886).

In 1858, Stearns sold Rancho La Laguna to Augustin Machado, who began the construction of a seven-room adobe west of the lake (City of Lake Elsinore 2011). This adobe would later become the site of the Laguna Grande station of the Butterfield Overland Mail stage line, which operated from 1858 to 1861 (City of Lake Elsinore 2011; Helmich 2008). This mail route followed the so-called "oxbow route," which skirted the Rocky Mountains by travelling south through Texas, New Mexico Territory, Fort Yuma, and Southern California, bypassing San Diego (Helmich 2008).

Franklin Heald purchased Rancho La Laguna from Machado and founded the town of Elsinore in 1883 (City of Lake Elsinore n.d., 2011). Taking the name from the City of Helsingnor from Shakespeare's *Hamlet*, the town would become a full-fledged city in 1888. The Atchison, Topeka, and Santa Fe Railroad was completed in the early 1880s, which allowed Elsinore to flourish (City of Lake Elsinore 2011).

Northeast of Elsinore is Railroad Canyon Reservoir, filled by the San Jacinto River that runs through Railroad Canyon. Railroad Canyon Reservoir was created by the construction of the Railroad Canyon Dam, built by the Temescal Water Company (TWC) between 1927 and 1929. Originally, portions of the reservoir were owned by the California Southern Railroad, which had a line running from Perris to Elsinore, and ranchers Henry Evans and B.T. Kuert. The reservoir and surrounding area were leased as a concession from the Temescal Water Company as a recreation area, and the Evans Fish Camp was constructed at Indian Beach to serve visitors, before being moved to the east side of Holiday Bay.

During World War Two, Camp Haun had a swimming school located at Indian Beach for training soldiers. Surrounding the lake is the city of Canyon Lake, which began as a master-plan community developed by the Corona Land Company in 1968, before being incorporated in 1990.

3.0 METHODS

HELIX staff requested a record search of the California Historical Resources Information System (CHRIS) from the Eastern Information Center (EIC) on January 6, 2023, which was received on April 11, 2023. The records search covered a one-mile radius around the project area and included the identification of previously recorded cultural resources and locations and citations for previous cultural resources studies.

A review of the California Historical Resources and the state Office of Historic Preservation (OHP) historic properties directories was also conducted. Various online repositories were consulted, including NETR Online, Newspapers.com, GeneologyBank.com, Google Earth, and the EVMWD website. Relevant historical documents, including record drawings, correspondence, meeting minutes, and photographs, provided by EVMWD were reviewed as available. Historic maps and aerial photographs were also reviewed. A pedestrian survey was conducted by HELIX Archaeologist Mary Villalobos, B.A., on March 31, 2023, accompanied by Native American monitors George Vargas from the Pechanga Band of Luiseño Indians (Pechanga) and William Swan of the Soboba Band of Luiseño Indians (Soboba). HELIX Senior Architectural Historian Teri Delcamp, M.A., performed a desktop review of the survey photos and conducted a site visit to assess the structures and take additional photographs on April 13, 2023.

4.0 ARCHIVAL RESEARCH

4.1 RECORDS SEARCH

The records search conducted at EIC covered a one-mile radius around the project site and included locations and records for archaeological and historical resources, historic addresses, locations and citations for previous cultural resources studies, and a review of the state OHP historic properties directory. The records search indicated that 32 previous cultural resources studies have been conducted within one mile of the project area, one of which overlaps with the project area. The EIC has a record of 14 previously recorded cultural resources within a one-mile radius of the project; one of these, a foundation and historic trash scatter, is recorded within the project boundaries. However, based upon a review of topographic maps and aerial photographs, it was determined that this resource lies outside the project area. The complete results of the records search are included in the Cultural Resource Survey for Canyon Lake Water Treatment Plant Phase 1 Improvements Project (Robbins-Wade et al. 2023).

4.2 OTHER ARCHIVAL RESEARCH

Various archival sources were also consulted, including historic topographic maps and aerial photos. The purpose of this research was to identify historic structures and land use in the area. Historic topographic maps and aerial imagery examined included aerial photographs from 1938, 1967, 1978, 1980, 1985, 1994, 2002 and 2005 (NETR Online 2023) and several historic USGS topographic maps, including the 1901 Elsinore (1:125,000 scale), 1901 and 1904 Southern California (1:250,000 scale) topographic maps and the 1953 and 1973 Elsinore and 1982 Lake Elsinore (1:24,000 scale) topographic maps (USGS Online Historical Topographic Map Explorer 2022).

The 1901, 1:125,000, Elsinore quadrangle, shows only the Southern California Railroad bisecting the project area, following Railroad Canyon and along the east side of the San Jacinto River. This is the same for the 1901 and 1904, 1:250,000, Southern California quadrangle maps. On the 1953 Elsinore, 1:24,000 map, Railroad Canyon Reservoir is visible, along with the dam, labeled Spillway 1382 (the elevation), as well as two structures and an access road immediately to the west of the dam. This access road becomes Old Newport Road, as it heads south and west, beyond the project area. There is also the beginning of a small community to the northeast of the project area along the edge of the reservoir, with a road leading to it from the east. The 1973 Elsinore and 1982 Lake Elsinore, 1:24,000 topographic maps, indicate that the city of Canyon Lake has begun to develop with additional roads and structures surrounding the reservoir, along with a golf course to the east. Additionally, two more structures are visible immediately to the west of the dam, along with two additional roads leading to them, one from the northeast and one from the northwest.

The 1938 aerial photograph indicates the study area still contains undeveloped land, with the only visible features consisting of the reservoir, the dam, three structures immediately to the west of the dam, and Old Newport Road leading to those structures from the south. The 1967 aerial photograph shows the Canyon Lake residential development to the northeast of the study area, as seen in the topographic maps, as well as several new structures in the study area that comprise the water treatment plant, immediately to the west of the dam. The 1978 and 1980 aerials show the continued expansion of residential development around the reservoir as well as the growth of the water treatment plant with several new structures visible. However, the majority of the study area continues to be undeveloped through to the present. According to the improvement plan record drawings, several

modifications to the CLWTP and the dam were made from circa 1995 to 2005; aerials from the years 1994, 2002, and 2005 document those modifications.

Archival research, including the review of these historic aerial photographs and topographic maps, indicates no development within the study area, outside of the dam and water treatment plant itself.

The Facilities Master Plan (FMP) was reviewed and included descriptions of the CLWTP with some construction dates for certain components (EVMWD 2018). Record drawings for the original Accelator clarifier dated 1955, as well as drawings for upgrades between 1963 and 2004, were provided by EVMWD and extensively reviewed to confirm modifications and dates of construction (EVMWD 1955, 1963, 1977, 1995, 1998, 2003, 2004). Numerous newspaper articles were consulted about the history of the EVMWD as well as the background, construction, and evolution of the Railroad Canyon Dam and the CLWTP.

5.0 BUILT ENVIRONMENT RESOURCES

This section describes the intact original structures over 45 years old that will be affected by the project, followed by brief descriptions and construction or modification dates of the other structures affected by the project that are either less than 45 years old or were significantly modified in the last 45 years.

5.1 CHEMICAL FEED BUILDING AND AREA 1

5.1.1 Background

The chemical feed building and area 1 are located adjacent to (northwest of) the clarifier. The original building was completed in 1956 (Morrison 1956). Based on the 1977 record drawings for an addition to the building, the original building was designed as an essentially two-story building with only the westerly corner of the building comprising one story, elevated at the second-floor level due to a fairly prominent grade break in that area. The building footprint was approximately 44 feet wide by 40 feet deep. Within the westerly single-story corner of the building was the chlorination room. The other three "corners" of the building were two stories and housed an electrical control room and a chemical feeder and mixing equipment room.

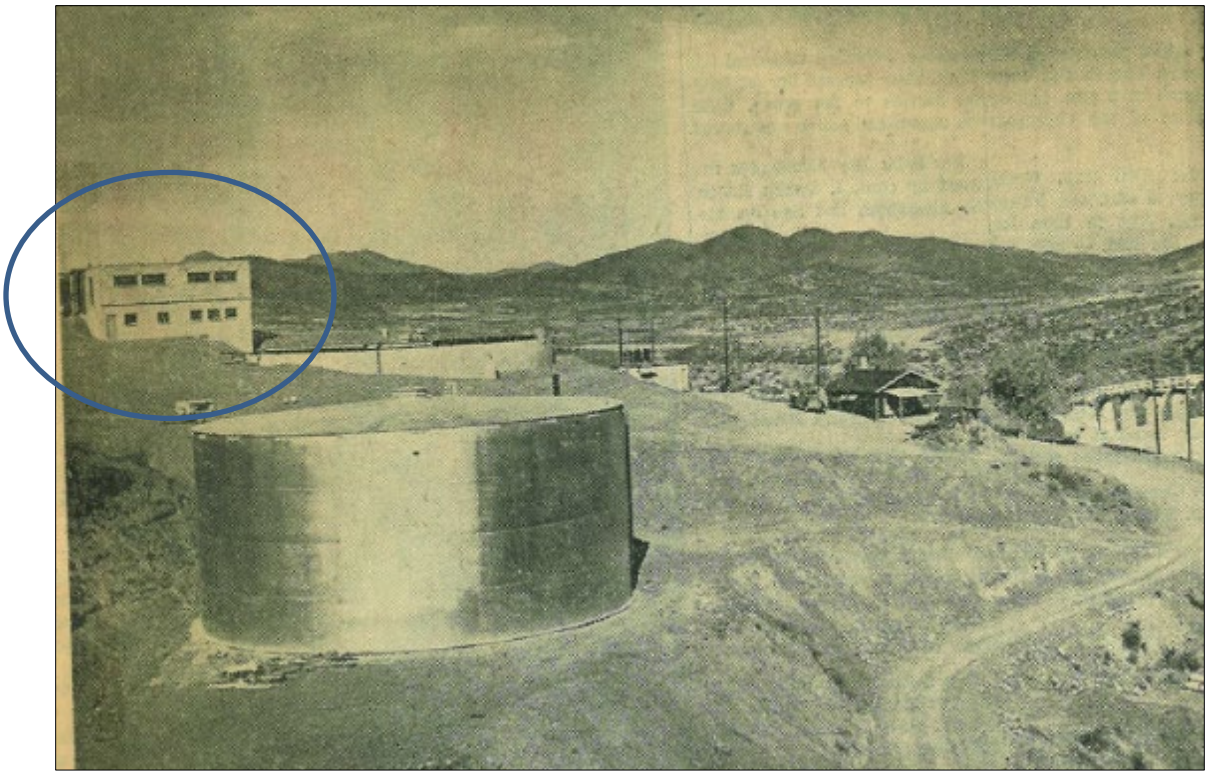


Plate 1. Chemical Feed Building 1, December 15, 1956. Source: Morrison 1956.

In 1977, plans for an approximately 44-foot-by-13-foot addition along the northwest rear façade of the building increased the size of the building by about 50 percent (EVMWD 1977). The one- and two-story addition provided a chlorine cylinder storage room and a liquid chemical storage room, along with a restroom. Rails, trolley, and a hoist were added to the existing overhead conveyors on the southwesterly exterior to lift chlorine cylinders. Based on the drawings and newspaper photographs in 1956, the two-story southeast façade of the building contained a single entrance door to the electrical room and five pairs of aluminum sliding windows in virtually square openings at the first floor, and four pairs of rectangular aluminum sliding windows arranged symmetrically at the second floor (Plate 1).

5.1.2 Present-Day Description

The Chemical Feed Building 1 is a one- and two-story concrete block building that is almost square in plan, with a flat roof. The hoist system projects from the building on the southwest side. Aerial views of the roof clearly show a delineation between the original 1956 building footprint and the 1977 addition (Plate 2). Related features for chemical storage are adjacent to the building.



Plate 2. Aerial showing delineation of Chemical Feed Area 1 Building addition. Source: Google Earth 2023.

5.1.2.1 Chemical Feed Building 1

Southeast Elevation

The southeast elevation of the building appears much the same as it did in the December 15, 1956 newspaper article photograph (Morrison 1956). The two-story elevation features painted concrete block exterior walls. A projecting concrete belt course circumscribes the building between the two floor levels. This elevation features a single door on the first floor at the left side of the façade flanked by two aluminum sliding windows, along with a set of three more aluminum sliding windows at the right side of the façade, all within square openings. The second floor exhibits symmetrically arranged fenestration consisting of four rectangular-shaped, aluminum sliding windows (Plate 3).

Southwest Elevation

The southwest elevation features the building's second story. The trolley, pulley, and hoist system extends out from the building at the left end, connected to the building wall by two horizontal members near the roof edge. Below each of the horizontal members is a rectangular loading door for storage tanks. The right side of the façade features a raised, covered loading dock (Plate 4).



Plate 3. Chemical Feed Building 1, southeast façade, looking northeast.



Plate 4. Chemical Feed Building 1 southwest façade with polymer storage pad and sulfuric storage enclosure at left, looking northeast.

Northwest Elevation

The northwest elevation is two stories at the left end and one story at the right end of the façade. This elevation is virtually a blank wall, with the belt course running horizontally along the building. A grouping of equipment cabinets and piping is located at the right end of the façade (Plate 5).

Northeast Elevation

The northeast elevation faces toward the dam and Canyon Lake. This façade is a two-story volume. Below the belt course between the two stories is a loading door at the left end and a person door at the right end. Two windows are located between the door openings. The second story exhibits two rectangular, aluminum sliding windows at the left end of the façade (Plate 6).



Plate 5. Chemical Feed Building 1 northwest façade, looking east.



Plate 6. Chemical Feed Building 1 northeast façade showing concrete block construction, looking west.

5.1.2.2 Chemical Feed Area 1 Related Features

Related features north of the main building include two sodium hydroxide and ferric chloride storage tanks with containment walls; an adjacent prefabricated sodium hydroxide storage building; a roofed, chain-link enclosure for sulfuric acid storage, feed system, and containment; and a polymer storage pad. All of these structures will be demolished. An existing trash receptacle and pad north of the sulfuric acid storage enclosure will be relocated.

The sodium hydroxide and ferric chloride storage area contains two storage tanks on a concrete pad, surrounded by slump stone containment walls. The adjacent sodium hydroxide storage building is a prefabricated, vertical ribbed metal building set on a slump block foundation. The polymer storage area consists of a concrete pad with several polymer storage containers (Plate 7). The sulfuric acid storage area features a storage tank on a concrete platform surrounded by a slatted, chain-link fence covered by a low-pitched metal roof (Plate 8).



Plate 7. Chemical Feed Area 1 sodium hydroxide and ferric chloride storage tanks with slump stone containment wall at right, and sodium hydroxide storage building at left, looking south.



Plate 8. Chemical Feed Area 1 sulfuric acid roofed storage enclosure with trash enclosure to the left, looking northeast.

5.2 INTAKE PUMPS AND ELECTRICAL BUILDING

Intake pumps and the electrical building were part of the CLWTP's original construction in 1956. According to the EVMWD Facilities Master Plan and confirmed by EVMWD record drawings (EVMWD 1955), a new intake pump system, including chemical injection and manifold structure, was constructed in 1998. The pump station includes a barge in Canyon Lake with six floating pump stations and a floating walkway to the on-shore valve control facility. The original electrical building is a functional utility structure with a gabled roof (Plate 9).



Plate 9. Intake pumps on barge, electrical building at right, looking north.



Plate 10. Static mixer (in-line), looking west.

5.3 STATIC AND RAPID MIX SYSTEMS

The static and rapid mix systems were part of the CLWTP's original construction in 1956. The static mixer is an inline system within a large horizontal pipe (Plate 10). The rapid mixer is a vertical mixer within a concrete block structure (Plate 11 and Plate 12). According to the FMP and confirmed by EVMWD record drawings (EVMWD 1995), a new rapid mixer was installed within the structure as part of the 1995 upgrades.



Plate 11. Rapid Mix enclosure, looking northeast.



Plate 12. Rapid Mix enclosure, looking west.

5.4 UPFLOW CLARIFIER

The original Accelator clarifier was designed by Albert Webb & Associates and installed in 1956. The Accelator clarifier featured a rotor-impeller system that circulated the raw water and chemical slurry through primary and secondary mixing and reaction zones to discharge treated water to the filter area. The Accelator was removed and replaced with an Eimco up-flow clarifier within the existing basin in 2002 (EVMWD 2018). According to EVMWD's website, the original clarifier was replaced, along with other rehabilitation work in order to comply with state regulations. The up-flow clarifier operates on a different basis than the original clarifier. The Eimco up-flow clarifier involves the use of a turbine within a central reaction well along with a motorized rotating rake to circulate water and discharge treated water to the filter area.

The structure housing the clarifier is a large, circular concrete flocculation and sedimentation basin structure surrounded by concrete decking and an external metal walkway (Plate 13). The clarifier's steel spokes radiate to the edge from a central equipment shaft. Metal stairs lead to a catwalk that accesses the central equipment shaft (Plate 14 and Plate 15).



Plate 13. Exterior of concrete structure housing clarifier, looking southwest.



Plate 14. Up-flow clarifier, looking east.



Plate 15. Detail of up-flow clarifier components, with operations building at right background, looking south.

5.5 SODIUM HYPOCHLORITE STORAGE, FEED SYSTEM, AND FILTER BUILDING

The sodium hypochlorite storage and chemical feed system is located within a series of open containment feed structures covered by sails and a filter building located above a subterranean filter gallery. The system includes two metering pumps and two storage tanks. The filter building and its internal equipment were constructed in 1995, slightly south of the original filter building that was demolished. The filter building is a single-story rectangular building constructed of split face block with a low-pitched gable roof covered in terra cotta tiles. A person-door occurs on both the northeast and southwest elevations, and the northwest elevation features two fixed pane windows facing the containment feed structures (Plate 16).



Plate 16. Containment feed structures at left, filter building at right, looking northeast.

5.6 CHEMICAL FEED AREA 2

The building that houses chemical feed area 2 was built in 2005 (EVMWD 2003). The building is located at the southwest end of the feed system and filter building. Like the filter building, the chemical feed building 2 is rectangular and constructed of split face block with a low-pitched gabled roof but covered in asphalt composition shingles. The east and west elevations are blank walls, while the south elevation contains a single person-door, and the north elevation contains a rollup door and a person-door (Plate 17).



Plate 17. Chemical Feed Building 2, looking east.

6.0 HISTORIC CONTEXT

6.1 RAILROAD CANYON DAM AND CANYON LAKE WATER TREATMENT PLANT

The project area is located directly south of Railroad Canyon Reservoir (known as Canyon Lake) and includes the Railroad Canyon Dam (also known as Canyon Lake Dam). The vast majority of the area has been undeveloped throughout its history, however, the California Southern Railroad connecting Perris to Elsinore ran through the project area along the east side of the San Jacinto River, between 1882 and 1927, at which point it was abandoned. While the surrounding area has been developed with residential properties, the project area itself has continued to be primarily undeveloped, with the only structures consisting of the Railroad Canyon Dam and supporting structures along with supporting roads present by at least 1938 (NETR Online 2023).

The Railroad Canyon Dam was constructed across the San Jacinto River by the Temescal Water Company (TWC) in 1927 (the dam is now owned and operated by EVMWD and is under the jurisdiction of the California Department of Water Resources, Division of Safety of Dams, for safety and compliance). The dam was upstream of Lake Elsinore, and the City of Elsinore (as it was known at the time) and property owners within the river's watershed near the lake had sued the TWC. The private property owners' suit centered on their reliance for many years on water from wells they had drilled near the river and lake. The city's suit was concerned about the environmental and aesthetic impacts that could occur if Lake Elsinore's water line receded below 1,245 feet AMSL. An agreement was reached in 1927 that settled the litigation and allowed the dam to be completed. (Morrison 1955a). Under the 1927 agreement between the Lake Elsinore Valley Water Users' Association and the TWC, known as the "Tilley

Agreement," excess water impounded by the dam beyond what TWC required would be released so long as the water level in Lake Elsinore was below a certain threshold. In 1951, for the first time in many years, water was released from the Railroad Canyon Dam to the San Jacinto River to Lake Elsinore (Riverside Independent Enterprise 1952; Morrison 1955d).

The EVMWD was formed on December 5, 1950, to bring Colorado River water from the MWD to the valley. The EVMWD was later annexed into MWD on September 28, 1954 (Morrison 1956). In 1955, the EVMWD filed a condemnation suit against TWC to acquire the Railroad Canyon Dam and reservoir, Lee Lake and the 30-inch pipeline between Lee Lake and Railroad Canyon reservoir, and underlying properties and water rights. EVMWD asserted that ownership was in the public interest and necessary in order to realize the goal of bringing Colorado River water to the area (Morrison 1955b).

In October 1955, the litigation ended with the EVMWD Board's approval of the "Railroad Canyon Storage Agreement". The agreement provided permanent easements to EVMWD for up to 3,000-acre-feet of water in the reservoir and the rights-of-way for pipelines and a treatment plant. Shortly afterward, EVMWD announced the sale of $1.6 million in water bonds to complete the treatment plant and improvements. The new agreement acknowledged that in flood years, the reservoir might fill to capacity and not allow for storage of MWD's Colorado River water by EVMWD. In that case, EVMWD could either purchase water from TWC or, if declining to do so, TWC would pay EVMWD for the water stored in EVMWD's storage space. In return, TWC retained operational control of the dam and reservoir, and exclusive rights to fishing, hunting, and recreation on and around the reservoir (Morrison 1955c). At the end of 1955, voters approved a bond measure to construct the Canyon Lake Water Treatment Plant, a 112,000-foot looped water line around the lake, and the Lakeview Siphon, which would connect to MWD's facilities and allow MWD water to flow into Canyon Lake (EVMWD n.d.).

Articles in late December 1956 reported that the Railroad Canyon Lake Water Treatment Plant (CLWTP) was completed (Morrison 1956). The completed plant consisted of the intake for pumping water, an Infilco Accelator and filtering system to treat water coming from the reservoir, a steel storage tank, chemical feed building, and thousands of feet of pipelines. The Accelator was a large concrete-lined steel basin about 86 feet in diameter and 20 feet deep with a rotator-impeller mounted on a central shaft. Its purpose was to mix and circulate raw water and purifying chemicals. The treated water would then be stored in a one MG steel water tank. Pipelines throughout the valley would then convey the water to end-users in the area, which included Elsinore Valley, Wildomar, Warm Springs Valley, and Alberhill. By December 1956, the 112,000-foot-long looped pipeline of 14-inch to 33-inch pipe had already been installed in the valley, and the siphon connection to MWD's aqueduct at Lakeview was almost complete (Morrison 1956).

EVMWD began testing the water in mid-January 1957. Although the connection to MWD's aqueduct at Lakeview was completed in January, MWD had not yet released water into the San Jacinto River. Part of the reason for the delay was that the free flow of water in the river was being impeded by plants and debris (Riverside Daily Press 1957; Morrison 1957a, 1957b). Finally, on March 5, 1957, Colorado River water began to flow from the MWD aqueduct, through a short canal to the San Jacinto River, then 12 miles down the river to Canyon Lake (Morrison 1957c). Although the connection to MWD's aqueduct was key to bringing fresh water to Canyon Lake, the CLWTP only treats and delivers water to a segment of EVMWD's customers - the facility accounts for approximately ten percent of their overall water supply (EVMWD 2018). The more significant impact of Colorado River water was to Lake Elsinore. In 1958, eight mutual water companies became part of EVMWD. By 1964, MWD had installed a new valve at Lakeview aqueduct, which allowed for more than 29,000-acre-feet of water to flow down through

Canyon Lake to Lake Elsinore. The significant increase in the water created a sea change in the recreational value of Lake Elsinore and, by extension, the community surrounding Lake Elsinore.

Modifications have been made over time to virtually all components of the CLWTP. In 1995, the vertical rapid mixer was replaced; the filter building, with four dual-media filters, piping, air scour system, and sodium hypochlorite storage and feed system, was installed; the backwash pumps were installed adjacent to the clearwater tank; and a new concrete-lined decant pond was installed with submersible pumps (EVMWD 1995). Then in 1998, the intake pump barge was installed, and the chemical injection and manifold structure was built on the shore adjacent to the barge (EVMWD 1998). In 2002, additional rehabilitation work was completed at the CLWTP to comply with state laws and included the replacement of the clarifier (EVMWD 2018). A final set of significant modifications was in place by 2005 when chemical feed area 2, the 0.25 MG chlorine contact tank, a new 1 MG clearwell tank, and an operations modular building were installed. Finally, circa 2009, the ultraviolet disinfection system was installed (EVMWD 2018, n.d.). The only component that appears to be original, dating to 1956, with an addition in 1977, is the chemical feed area 1 and building. Therefore, it is only this area of the CLWTP facility that is evaluated for historic significance in the next section.

7.0 SIGNIFICANCE EVALUATION

This section evaluates the potential significance of resources over 45 years in age. The rest of the structures are not required to be evaluated for historic significance because they have been added, replaced, or significantly modified after the 1956 construction date and within the last 45 years and have not achieved historic significance. The structures requiring a significance evaluation are the chemical feed building and area 1, the static mix pipe, the rapid mix enclosure, and the electrical building near the intake pumps.

7.1 SIGNIFICANCE CRITERIA A/1

NRHP Criterion A: Is associated with events that have made a significant contribution to the broad patterns of our history

CRHR Criterion 1: It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage

The resources **do not appear significant** under Criteria A/1.

The CLWTP accounts for the treatment and delivery of only ten percent of the EVMWD's water supply. The Chemical Feed Building and Area 1 and related features, as well as the static mixer, rapid mix enclosure, and electrical building, are all functional aspects of the CLWTP. The Chemical Feed Building houses chemicals, with adjacent chemical storage areas adjacent and external to the building. The static mixer within the pipe, the rapid mixer enclosure, and the electrical building that serves the intake pump system are all purely functional components of the CLWTP that are understood to require replacement as newer technologies come online. While the CLWTP requires chemicals and mixers in order to operate and effectively treat water, the form, plan, materials, and location of the physical structures are not significant except for their ability to function effectively. Changes over time in water treatment approaches and technology, as well as regulatory provisions, often require modifications or demolition and replacement of outdated infrastructure, as is proposed with the current project. Research

conducted for this study did not find any evidence that these structures made any specific or important contributions to the broad patterns of our nation's or state's history.

Therefore, the resources **do not appear significant** under Criteria A/1.

7.2 SIGNIFICANCE CRITERIA B/2

NRHP Criterion B: Is associated with the lives of persons significant in our past

CRHR Criterion 2: It is associated with the lives of persons important in our past

The resources **do not appear significant** under Criteria B/2.

The research did not identify any significant or important persons in our past who were associated with the Chemical Feed Building and Area 1 and related features, the static mixer, rapid mix enclosure, or electrical building.

Therefore, the resources **do not appear significant** under Criteria B/2.

7.3 SIGNIFICANCE CRITERIA C/3

NRHP Criterion C: Embodies the distinctive characteristics of a type, period, or method of installation, or represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction

CRHR Criterion 3: It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values

The resources **do not appear significant** under Criteria C/3.

The Chemical Feed Building is utilitarian in its design and construction. The vernacular building does not exhibit an architectural style and does not feature any design details or possess high artistic values. The associated features are functional for the purpose intended. The static mixer, rapid mix enclosure, and electrical building are all functional aspects of the CLWTP and do not represent any distinctive or unique characteristics. There is no evidence that the resources are associated with a master or important creative individual.

Therefore, the resources **do not appear significant** under Criteria C/3.

7.4 SIGNIFICANCE CRITERIA D/4

NRHP Criterion D: It has yielded, or may be likely to yield, information important in prehistory or history

CRHR Criterion 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

The resources **do not appear significant** under Criteria D/4. Research conducted for this study found no evidence that the resources are significant as a source or likely source of information about prehistoric or historic construction methods, materials, or technologies.

Therefore, the resources **do not appear significant** under Criteria D/4.

8.0 SUMMARY AND MANAGEMENT RECOMMENDATIONS

HELIX undertook a study to identify built environment resources within the proposed Canyon Lake Water Treatment Plant Phase 1 Improvements project area and to determine the effects of the project on historical resources per CEQA and Section 106. The historical resource evaluation study did not identify any historical resources within the project area; therefore, no impacts to built environment historical resources/historic properties are anticipated from project implementation.

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Appendix A

Resumes of Key Personnel

EDUCATION

Master of Arts, History, California State University San Marcos, 2015

Bachelor of Arts, Liberal Studies (History), California State University Long Beach, 1986

PROFESSIONAL AFFILIATIONS

American Planning Association

National Trust for Historic Preservation

California Preservation Foundation

AWARDS

Association of Environmental Professionals, Merit Award, Carlsbad Tribal, Cultural and Paleontological Resources Guidelines

American Institute of Architects San Diego Chapter, Divine Detail Award, Montanez Adobe, San Juan Capistrano, CA

TERI DELCAMP

Senior Architectural Historian



Ms. Delcamp is a qualified historian/architectural historian who meets the Secretary of the Interior's standards for her profession. Ms. Delcamp has more than 20 years of professional experience in preparing history and architectural history studies in California. She has served as Principal Planner for the City of Carlsbad, Senior Planner (Historic Preservation) for the City of Riverside, Historic Preservation Manager for the City of San Juan Capistrano, and Senior Planner for the cities of San Diego, Oceanside, and San Clemente. Ms. Delcamp's experience includes a wide range of study types, from the preparation of historic context studies to historic built environment evaluations.

Shady View Residential Project Environmental Impact Report. Architectural Historian for a cultural resources study in support of the proposed the development of 159 single-family homes, open space and recreational amenities, and associated street, utility/infrastructure, and drainage improvements in the City of Chino Hills in San Bernardino County. Assisted in the preparation of the technical report and DPR Form in compliance with state and federal regulations. Project scope included a cultural resources records search, literature review and archival research, review of historic maps and aerials, field survey, historic significance evaluation and preparation of a technical report in support of the Project EIR. Work performed for the City of Chino Hills.

Munoz Second Story Addition Historic Architecture Assessment. Architectural Historian for a Historic Resources Evaluation for a project applicant's proposed modification to construct a second story addition and a two-car garage to an existing residence located on 10th Street in Union City. A historical evaluation of the subject property was completed in 1998, and it was determined to be eligible as a contributor to the Old Decoto Historic District. Prepared Historic Resources Evaluation to determine if the residence still qualifies as a contributing element of the District and/or meets the criteria for listing on the California Register of Historical Resources. Work performed for the City of Union City.

Coachella Canal Storage Archaeological & Biological Assessments. Architectural Historian for the Mid-Canal Reservoir Storage Project, proposed as an inline reservoir on the Coachella Canal that will be formed by removing the existing embankment between the existing lined canal with the original earthen canal section to form a single wide trapezoidal section. Responsible for reviewing extant data on the historicity of the National Register of Historic Places (NRHP)-eligible Canal, surveying the project, and completing an impacts/effects analysis utilizing the data from the survey and the literature review. Work performed as a subconsultant to Harvey Consulting Group, with Coachella Valley Water District and Bureau of Reclamation as the lead agencies.

Tijuana River Valley Regional Park Brown Fill Property. Architectural Historian for a cultural resources study in support of a potential restoration project at the Brown Fill Property within the Tijuana River Valley Regional Park in San Diego County. Assisted in the preparation of the technical report and DPR Form in compliance with state and federal regulations. Project scope included a cultural resources records search, literature review and archival research, review of historic maps and aerials, field survey, historic significance evaluation and preparation of a technical report. Work performed for the County of San Diego Department of Parks and Recreation.

Granite Grammar School Cultural and Historical Resources Assessment. Architectural Historian for cultural resources assessment report to meet CEQA and NHPA compliance requirements. Located in the Folsom Historic District, Granite Grammar School was originally constructed in 1915 and consists of a Spanish architectural style with Gothic Revival influences. The School is currently configured and used as commercial office space. The proposed project would subdivide the existing lot into three parcels; the historic building would remain with its current use, while the subdivided vacant lots would be intended as future residential parcels consistent with the Single-Family High Density General Plan land use and Single-Family Dwelling Small Lot zoning designations of the property. Prepared an archaeological assessment and built environment evaluation for the City and project applicant's consideration. Work performed for the City of Folsom.

Marysville Parks & Open Space Master Plan. Senior Architectural Historian for the City of Marysville Parks and Open Space Master Plan project, which proposes minor upgrades to Ellis Lake Park, including rerouting and widening a three-foot path to six feet and adding a series of benches, exercise stations, a playground, and an event stage. The project includes in-depth historical research and preparation of a Historic Resource Evaluation Report for Ellis Lake Park. Work is being performed for the City of Marysville.

PREVIOUS EXPERIENCE

Principal Planner, City of Carlsbad. Manage the current planning and customer service sections supervising 11 employees, including senior planners, associate planners and planning technicians. Review the most complex development projects ranging across the full spectrum of land uses and entitlements. Make CEQA determinations for both sections; provide cultural resource CEQA significance determinations for section development projects and provide internal peer review of cultural resource studies. Conduct CEQA analyses including preparation of initial studies and mitigated negative declarations. Implement and administer a variety of local land use regulations including Tribal, Cultural & Paleontological Resources Guidelines; Local Coastal Program; Habitat Management Plan and Airport Land Use Compatibility Plan. Prepare and present reports to Commissions and Council. Respond to inquiries and meet with community members to provide information and discuss land use-related concerns.

Carlsbad Tribal, Cultural, and Paleontological Resources Guidelines. Senior Planner for the update to cultural resources guidelines for the City of Carlsbad. Oversaw consultant contract, oversaw tribal consultation, collaborated and edited draft and final document, and achieved City Council adoption. Work performed for the City of Carlsbad.

City of Carlsbad Cultural Resource CEQA Determinations for Development Projects. Senior Planner for determining the need for cultural resources/historical reports for numerous projects including single family homes, historic theater, historic school campus buildings, churches, commercial and institutional sites. Work performed for the City of Carlsbad.

City of Carlsbad Tribal Consultation Projects. Senior Planner for leading or assisting City colleagues conducting AB 52 and SB 18 tribal consultations for numerous development projects, General Plan Amendments and Specific Plan Amendments. Work performed for the City of Carlsbad.

City of Riverside Historic Preservation Senior Planner. Managed and oversaw day-to-day operation of historic preservation section within the Neighborhood Engagement Division. Detailed analysis and presentation of planning cases to decision-makers. Managed projects and consultant contracts for various surveys and CEQA documents. Acting Historic Preservation Officer for Administrative Certificates of Appropriateness. Prepared and secured grants and prepared progress reports and annual reports in conjunction with the Certified Local Government program. Authored and reviewed cultural resource reports submitted in support of designation, historical significance evaluations and/or in accordance with CEQA. Supervised Associate Planner and Assistant Planner. Partnered with community preservation organizations and other departments to achieve preservation goals. Provides customer service via public counter, telephone and email regarding land uses, development standards and historic preservation. Work performed for the City of Riverside.

City of Riverside Consultant Contract Management. Senior Planner focused on Historic Preservation in the City of Riverside. Prepared Requests for Proposals and managed professional consultant contracts for preparation of Environmental Impact Report and Mitigated Negative Declaration for historic resource demolition and area-wide Utility Department infrastructure improvements, respectively. Prepared Requests for Proposals and managed professional consultant contracts for preparation of historic surveys for grant funded work and Specific Plan updates. Work performed for the City of Riverside.

City of Riverside Historic Preservation Ambassador Training Program. Prepared Request for Proposals and managed consultant for new training manual and workshop series to create cohort of community preservation leaders to assist city in preservation education and advocacy. Work performed for the City of Riverside.

Relocation of the Cooper House. As Senior Planner, prepared a Cultural Resources Report and Evaluation of Impacts for the Cooper House. Work performed for the City of Riverside.

4135 Market Street, Structure of Merit Designation. Senior Planner for the preparation of a Historic Evaluation & DPR Form for a significant structure located at 4135 Market Street in Riverside.

Historic Evaluation & DPR Form Recordation for the James & Jessie Shaw Residence. Senior Planner for preparation of a historic evaluation and landmark designation for a private residence at 8410 Cleveland Avenue. Work performed for the City of Riverside.

Historic Evaluation & DPR Form Recordation for the Frank and Katherine Wells-Patsy O'Toole House. Senior Planner for the preparation of a historic evaluation, DPR form and landmark designation for a private residence at 1945 Arroyo Drive. Work performed for the City of Riverside.

Historic Evaluation & DPR Form Recordation for the Mackey House. Senior Planner for the preparation of a historic evaluation, DPR form and landmark designation for a private residence at 6140 Tiburon Drive. Work performed for the City of Riverside.

Cultural Resources Report and Evaluation of Impacts, Demolition of 11134 and 11144 Pierce Street. Senior Planner for the preparation of a cultural resources report prior to the demolition of properties located at 11134 and 11144 Pierce Street. Work performed for the City of Riverside.

Riverside Mid-Century Modern Building Survey Certified Local Government Grant. Grant writer and contract and project manager for a survey and inventory of mid-century modern buildings in Riverside. Work performed for the City of Riverside.

Riverside Mid-Century Modern Subdivision Oral Histories Certified Local Government Grant. Grant writer and contract and project manager for preparation of oral histories surrounding mid-century modern buildings in Riverside. Work performed for the City of Riverside.

American Recovery and Reinvestment Act (ARRA) Surveys. Senior Planner for the completion of historical contexts and preparation of a multiple property DPR form. Work performed for the City of Riverside.

Management of Certificates of Appropriateness. Senior Planner for the analysis, preparation for Board and Council consideration, and supervision or approval of numerous planning applications for master plans, additions, adaptive re-use, relocation and/or restoration of historic commercial, industrial, educational and residential landmarks and district contributors, including commercial offices/stores, train depots, packing houses, individual homes and college campus landmarks, etc. Work performed for the City of Riverside.

Historic Preservation Fund Grant Program. Senior Planner for the management of bi-annual General Fund competitive grant program for historic preservation projects including staff to Council-created committee for award of grants. Work performed for the City of Riverside.

Historic Preservation Manager, City of San Juan Capistrano. Solely responsible for management and administration of the City's historic preservation program. Staffed City's Cultural Heritage Commission. Reviewed complex development projects affecting designated historic sites. Managed planning, design, bid and construction phases of 7-year Capital Improvement Program for City-owned historic sites (approximate budget $1.3 million). Developed and administered Historic Preservation section's annual budget and coordinated annual historic building maintenance budget and priorities with Public Works. Wrote and presented reports to Commissions, Council, community organizations and public. Coordinated with other departments and state and federal agencies on historic preservation issues and projects. Prepared, supervised and/or reviewed National Register, California Register and local nominations. Conducted historic preservation public outreach including events and workshops.

Forster Mansion Exclusive Events Conditional Use Permit. Historic Preservation Manager for controversial, complex case for outdoor special events within mixed use residential and commercial area. Work performed for the City of San Juan Capistrano.

Zoomars on Los Rios Conditional Use Permit. Historic Preservation Manager for the management of a complex expansion of non-conforming use case for petting zoo in residential historic district. Work performed for City of San Juan Capistrano.

Montanez Adobe Restoration and Seismic Repair. Historic Preservation Manager for the preparation of RFPs and managed contracts; managed design, bid and construction. Montanez Adobe project received state award 2012. Work performed for the City of San Juan Capistrano.

7-Year Capital Improvement Program for City-Owned Historic Structures. Contract & Project Manager for bid and construction projects including Harrison House Repair & Restoration, Roger Williams/Swanner House Historic Paint Restoration, Roger Williams /Swanner House and Water Tower Foundation Repairs, Roger Williams/Swanner House Interior Repairs, Joel Congdon House Repairs, and Blas Aguilar Adobe Repairs. Work performed for the City of San Juan Capistrano.

Seven-Year Capital Improvement Program for City-Owned Historic Structures. Contract & Project Manager for Design RFP, Bid & Construction, including Montanez Adobe Restoration & Seismic Repair, Joel Congdon House ADA Improvements, Joel Congdon House Water Tower Restoration, Parra Adobe Seismic Repair and Restoration Historic Structure Report. Work performed for the City of San Juan Capistrano.

Seven-Year Capital Improvement Program for City-Owned Historic Structures. Contract & Project Manager for RFP for Historic Structure Report and Rehabilitation Plans, including Parra Adobe Save America's Treasures Grant, The Ecology Center at the Congdon House, Blas Aguilar Adobe Repair and Native Education Facility, Mission San Juan Capistrano: Rectory Garden; Entry Restoration and Gift Shop projects, Historic Evaluation Report, Nick's Café, 26755 Verdugo Street, SB18 Tribal Consultation for General Plan and Specific Plan projects,

and management of Historic Preservation Week 2006, 2007, 2008, 2009. Work performed for the City of San Juan Capistrano.

Senior Planner, City of Oceanside. Under direction of City Planner, supervised the current planning and customer service section. Supervised Associate Planners and Assistant Planners, including completion of performance evaluations. Reviewed complex development projects ranging across the full spectrum of land uses and entitlements, including CEQA initial studies and documents. Implemented Local Coastal Program. Wrote and presented reports to Commission and Council. Work performed for the City of Oceanside.

Senior Planner, Historic Preservation, City of San Diego. Staffed Old Town Community group and Design Review Board; evaluated and presented planning cases to both. Managed and administered City's historic preservation program and supervised staff including Administrative Interns, Secretary and Senior Planners on team. Conducted detailed review of historic resource reports and surveys for designation. Oversaw and participated in historic resource surveys. Reviewed projects for consistency with Secretary of the Interior's Standards. Staffed Historical Resources Board. Participated in Section 106 consultation and managed MOU and PA compliance, coordinating with Port Authority, Navy Region Southwest and various historic preservation organizations, etc. Fulfilled Certified Local Government duties. Wrote and presented reports to Board, Commissions, Council, community organizations and public. Conducted historic preservation public outreach including events, training, and workshops.

Naval Training Center Historic District Plancheck Drawings. Senior Planner for an evaluation of the Liberty Station Re-Use plans for consistency with Secretary of the Interior's Standards. Work performed for the City of San Diego.

Secretary of the Interior's Standards Consistency Determinations. Senior Planner for the San Diego Zoo/Balboa Park expansion; Salk Institute Expansion; SDG&E Station A adaptive re-use; Santa Fe Depot/Museum of Contemporary Art; Coronado Belt Line bike trail; Hard Rock Hotel/Depot re-use; various rehabilitation and re-use projects in Gaslamp Historic District, Old Town San Diego, etc. Work performed for the City of San Diego.

US Navy, US Marine Corps and San Diego Airport Authority Section 106 Programmatic Agreement (PA) Compliance. Senior Planner to review proposals for consistency with the PA. Met with agency representatives and property owners.

La Jolla Intensive Historic District Survey. Senior Planner on a survey team for the La Jolla Historic District. Work performed for the City of San Diego.

Burlingame and Islenair Historic Districts. Senior Planner for the supervision of the preparation of historic contexts and historic district nominations. Work performed for the City of San Diego.

East Village, Warehouse, and African American Historic District Surveys. Outreach team member for inventories of historic districts in the East Village, Warehouse District, and the historic African American district of San Diego. Work performed for the City of San Diego.

Individual Historic Designations and Mills Act Program. Reviewed all historic designation requests and referrals, prepared staff reports, supervised staff and managed Mills Act contract program comprising 80-100 property evaluations per year; worked with Deputy Director, community, preservation stakeholders and Land Use Committee to develop methodology for implementing new fees for designations and Mills Act contracts.

Senior Planner, City of San Clemente. As Senior Planner, supervised the current planning and customer service section. Supervised Associate Planners and Assistant Planners, including completion of performance evaluations. Reviewed complex development projects ranging across the full spectrum of land uses and entitlements, including CEQA initial studies and documents. Supervised consultant contracts on various projects including

General Plan amendments, Specific Plans and implementing entitlements, grants and CEQA documents. Served as Air Quality Planner and LOSSAN rail corridor technical advisory committee member. Managed and administered Planning Commissions and Design Review Subcommittee. Fulfilled Certified Local Government duties. Wrote and presented reports to Commissions, Council, community organizations and public. Established and implemented Mills Act incentive program. Conducted public outreach including community workshops and training.

Marblehead Coastal Project. Managed mid-1990s re-activation of 117 acre, 400+ dwelling unit and 61 acre regional commercial project; supervised and coordinated consultants for General Plan Amendment, Specific Plan and EIR; managed all associated entitlements including tentative tract, site plan review, conditional use permits, design review; coordinated weekly meetings with developer team, and meetings and reviews with other agencies including Coastal Commission and Department of Fish and Game; coordinated all revised project documentation and reports through numerous public hearings; processed project through to approval by Planning Commission and City Council.

San Clemente Metrolink Station. Managed city portion of award-winning project adjacent to National Register community building; liaised with OCTA consultant; supervised separate design consultant for ancillary "depot" building; coordinated staff and community meetings; developed ancillary building budget and design priorities; completed shared parking analysis, coordinated Coastal Commission's acceptance of methodology, and conducted required monitoring.

City of San Clemente Certified Local Government. Assisted in preparation of application, program, ordinance, etc., to obtain CLG status; prepared grant application; managed OHP and consultant contracts for grant; conducted research, outreach, workshops and public hearings to adopt updated survey; conducted workshops with CLG grant consultant; planned, prepared and obtained approval for City of San Clemente's first Mills Act Contract program.

City of San Clemente Downtown/Business Park Economic Development Achievements and Housing Balance. Managed numerous retail, office and industrial from discretionary entitlements through plancheck to permit issuance for 200,000+ square feet in new projects including DeNaults Hardware; Sav-On; Rip-Curl; Rancho San Clemente Plaza Pacifica; Rancho San Clemente Industrial Park; Talega Business Park; Rancho San Clemente Business Park; as well as residential subdivisions for 500+ dwelling units throughout Forster Ranch and Rancho San Clemente Specific Plan areas, Cross Hill, and numerous individual home developments.

City of San Clemente Advanced Planning. **P**repared SCAQMD AQMP baseline analysis for City as representative to Orange County Air Quality Technical Advisory Committee; wrote Zoning Code for amended site plan review process and historic preservation incentives; member of staff advisory committee for Citywide General Plan and comprehensive Zoning Code updates, and new Urban Design Guidelines; represented City on LOSSAN rail corridor technical advisory committee which resulted in new Metrolink Station; prepared grant applications for transportation enhancement projects.

MARY ROBBINS-WADE, RPA

Cultural Resources Group Manager



Ms. Robbins-Wade is HELIX's Cultural Resources Group Manager and Principal Archaeologist. With 43 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.

Lake Elsinore Honda (Archaeological Services). Project Manager/Principal Investigator for a cultural resources survey of a proposed auto dealership project in the City of Lake Elsinore. Oversaw background research and field survey; responsible for Native American coordination and report preparation. Work performed for David Evans Associates, with the City of Lake Elsinore as the lead agency.

Diaz Road Expansion, PW17-25. Principal Investigator/Cultural Resources Task Lead for cultural resources survey in support of an IS/MND for proposed city infrastructure improvements associated with the widening and construction of Diaz Road in the City of Temecula. The cultural resources study included tribal outreach and coordination to address the cultural sensitivity of the project area. Oversaw cultural resources study; responsible for tribal outreach and senior oversight on technical report. Work performed for David Evans and Associates, with the City of Temecula as the lead agency.

Windsong/Skylar Place Residential Project (TTM 38123). Principal Cultural Resources Specialist for a proposed residential development in the City of Moreno Valley. The project includes construction of 177 single-family residential lots, a 2.2-acre park, water quality retention basins, open space areas, underground utilities, and internal streets/sidewalks. Responsibilities include providing senior technical oversight and quality control for cultural resources survey and technical report. Work performed for DR Horton with the City of Moreno Valley as lead agency.

Judson Potable Water Storage Tank and Transmission Pipeline IS/MND. Cultural Resources Task Lead for this project in the City of Moreno Valley. Eastern Municipal

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 (California), FLPMA Permit No. CA-18-35

County of San Diego, Approved CEQA Consultant for 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

Water District is proposing 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. 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.

Cactus II Feeder Transmission Pipeline IS/MND. 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.

Sky Canyon Sewer Environmental Consulting. Cultural Resources Task Lead for this project adjacent to the City of Murrieta in southwestern Riverside County. Eastern Municipal Water District (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.

Dale 2199C Pressure Zone Looping Pipeline Project. Cultural Resources Task Lead for this project in Moreno Valley. Eastern Municipal Water District proposed construction of a new pipeline to connect two existing pipelines in the District's 2199C Pressure Zone. The pipeline would consist of an 18-inch-diameter pipeline between Kitching Street and Alta Vista Drive that would connect to an existing 12-inch-diameter pipeline in the northern end of Kitching Street and to an existing 18-inch-diameter pipeline at the eastern end of Alta Vista Drive. The project will improve reliability and boost the Dale Pressure Zone's baseline pressure and fire flow availabilities. Four potential alignments were under consideration; three of these bisect undeveloped land to varying degrees, while the other is entirely situated within developed roadways. Oversaw background research and field survey. Responsible for Native American outreach for cultural resources survey and co-authored technical report. Work performed under an as-needed contract for Eastern Municipal Water District.

Purified Water Replenishment Environmental Impact Report. 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 Eastern Municipal Water District's (EMWD) 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.

Warm Springs Lift Station Replacement. Cultural Resources Task Lead/Principal Investigator 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. Oversaw background research, field survey, and report preparation. Responsible for Native American outreach and coordination; coordinated with Pechanga Cultural Resources on Native American concerns. Work performed for Eastern Municipal Water District.

Seraphina Project. Principal Investigator/Cultural Resources Task Lead for a cultural resources study in conjunction with biological permitting for a proposed residential development and associated drainage improvements along Santa Gertrudis Creek in the City of Temecula, Riverside County. The cultural resources study includes a records search and background research, Native American coordination and contacting the Native American Heritage Commission, field survey, coordination with U.S. Army Corps of Engineers, and preparation of a report addressing the National Historic Preservation Act Section 106 compliance. Work was performed for Hillcrest Homes, with the City of Temecula as the lead agency.

Downtown Riverside Metrolink Station Track & Platform Project. Cultural Resources Task Lead for this project involving changes to and expansion of the Downtown Metrolink Station in Riverside. Oversaw records search and background information, archaeological survey, and report preparation; served as primary report author. Responsible for coordination with Native American Heritage Commission, Riverside County Transportation Commission (RCTC), and Federal Transportation Authority (FTA) on Native American outreach. Work performed for Riverside County Transportation Commission as a subconsultant to HNTB Corporation.

Eastern Municipal Water District Well 59 Wellhead Treatment Facilities IS/MND. Senior Archaeologist providing quality control and oversight for cultural resources survey and report for this project, in the City of Moreno Valley, which includes a background research, field survey, report preparation, and Native American outreach. HELIX is performing an environmental review and CEQA document preparation, including assisting EMWD with Native American consultation in accordance with Assembly Bill 52. The project consists of the evaluation and design of wellhead treatment facilities to remove perfluorinated compounds from the existing Well 59. The approximately 0.68-acre project site is located within the 1627 zone, at the intersection of Nance Street and Indian Avenue. Work performed for Kennedy Jenks Consultants with EMWD as the lead agency.

EVMWD Near Term Water Supply Program, On-call Professional Environmental Services. Cultural Resources Task Lead/Principal Investigator for an on-call services contract to provide environmental services for water supply projects. Work performed for Elsinore Valley Municipal Water District. 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). 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 EVMWD.

Rady Murrieta Project. Principal Investigator/Cultural Resources Task Lead for a medical office building project in the City of Murrieta, Riverside County. The cultural resources survey included a records search at the Eastern Information Center, Sacred Lands File search from the Native American Heritage Commission (NAHC), tribal outreach and coordination, a field survey, and preparation of a report per CEQA and City requirements. Work was performed for Rady Children's, with the City of Murrieta as the lead agency.

Murrieta Hot Springs Road Improvements Project. Principal Investigator/Cultural Resources Task Lead for cultural resources survey in support of an IS/MND for the widening of Murrieta Hot Springs Road in the City of Murrieta. The project would widen/restripe Murrieta Hot Springs Road between Winchester Road and Margarita Road from four to six lanes, to improve traffic flow and provide bike lanes, a raised median, light poles, signage, stormwater catch basins, retaining walls, and sidewalks. The cultural resources study included tribal outreach and coordination to address the cultural sensitivity of the project vicinity. Oversaw cultural resources study; responsible for tribal outreach and senior oversight on technical report. Work performed for SB&O, Inc., with the City of Murrieta as the lead agency.

12 Oaks Winery Resort. Project Manager/ Principal Investigator for a cultural resources survey of approximately 650 acres for a proposed project in the County of Riverside. Oversaw background research, field survey, site record updates, Native American coordination, and report preparation. Met with Pechanga Cultural Resources staff to discuss Native American concerns. Worked with applicant and Pechanga to design the project to avoid impacts to cultural resources. Work performed for Standard Portfolio Temecula, LLC, with the County of Riverside as lead agency.

Oak Valley Town Center. Principal Cultural Resources Specialist/Cultural Resources Task Lead for a mixed-use project in the City of Calimesa, Riverside County. Proposed uses would include approximately 2,250,000 square feet of warehouses and approximately 751,800 square feet of commercial retail uses. Serving as lead for the cultural resources survey and historic resources evaluation, as well as cultural resources monitoring program (upcoming). Work performed for Terra Verde Group, with the City of Calimesa as the lead agency.

EMWD Quail Valley III Regional Water Tank Environmental Consulting. Cultural Resources Task Lead for a cultural resources survey for a proposed 1.63-million-gallon potable water storage tank in the City of Menifee. Overseeing background research, field survey, and report preparation. Responsible for Native American outreach and coordination. Work performed for Pulte Group, with Eastern Municipal Water District as the CEQA lead agency.

French Valley South Tract 30837 Project. Principal Investigator for a 153-acre residential project in the unincorporated community of French Valley, Riverside County. Oversaw background research, field survey, site record updates, Native American coordination, and preparation of a cultural resources report update in support of wetland permitting. The project proposes construction of 312 single-family residences.

Moreno Valley Tentative Tract Map 36760 Project. Principal Investigator for a cultural resources survey of a 53-acre site in the City of Moreno Valley, Riverside County. Oversaw background research, field survey, site record updates, Native American coordination, and preparation of a cultural resources report. Project proposed construction of 221 single-family residences, including the installation of necessary utilities and new connecting roadways.

Wildomar Crossings Retail Development Project. Principal Investigator for a cultural resources survey for a proposed retail development project in the City of Wildomar in Riverside County. The cultural resources survey included a records search, Sacred Lands File search and Native American outreach, review of historic maps and aerial photographs, an intensive field survey, and report preparation. Work performed for Mann Property Company, with the City of Wildomar as the lead agency.

Roripaugh Ranch Phase 2. Principal Investigator/Cultural Resources Task Lead for a cultural resources study in conjunction with biological permitting for roadway and drainage improvements along Santa Gertrudis Creek in the City of Temecula, Riverside County. The cultural resources study includes a records search and background research, Native American coordination and contacting the Native American Heritage Commission, field survey, coordination with U.S. Army Corps of Engineers, and preparation of a report addressing the National Historic Preservation Act Section 106 compliance. Work performed for Roripaugh Valley Restoration, LLC.

Lake Elsinore MEBO Resort Project. Cultural Resources Task Lead/Principal Investigator for a cultural resources survey of off-site parcels for a proposed resort development in the City of Lake Elsinore. Met with client and Pechanga to discuss the significance of cultural resources within and adjacent to the project site. Oversaw background research and field survey, responsible for Native American coordination and report preparation. Work performed for LK Investment Group, with the City of Lake Elsinore as the lead agency.

Yum Donuts Moreno Valley Project. Cultural Resources Lead and Project Manager for a project in the City of Moreno Valley that proposed to develop a vacant lot for a 5,515-square foot Yum Donuts restaurant and convenience store with car wash and gas station. HELIX provided technical reports (cultural resources and air quality/greenhouse gas analysis) and the Initial Study/Mitigated Negative Declaration. Oversaw cultural resources study and provided senior technical review. Work performed for A&S Engineering with City of Moreno Valley as the lead agency.

Ramona E-Commerce Warehouse Park EIR. Principal Cultural Resources Specialist/Cultural Resources Task Lead for a Specific Plan Amendment in the City of Perris, Riverside County to allow for 247,884 square feet of small-scale warehousing with 39 dock positions for delivery trucks, 415 parking stalls, a groundwater basin, and landscaping improvements. Led the cultural resources survey and technical report. Responsible for Native American outreach and coordination, served as primary report author, and oversaw archaeological fieldwork. Work performed for JM Realty Group, with the City of Perris as lead agency.

Appendix D

Cultural Resources Survey
(bound separately)

Appendix E

Geotechnical Evaluation

LIMITED GEOTECHNICAL/GEOLOGIC EVALUATION
CANYON LAKE WTP – FACILITIES MASTER PLAN
CANYON LAKE, CALIFORNIA

Prepared For:

KENNEDY/JENKS CONSULTANTS
300 N. Lake Avenue, Suite 1020
Pasadena, CA 91101

Project No. 11708.001

March 22, 2018

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

March 22, 2018
Project No. 11708.001

KENNEDY/JENKS CONSULTANTS
300 N. Lake Avenue, Suite 1020
Pasadena, CA 91101

Attention: Mr. David Ferguson, PhD, P.E., Vice President

Subject: Limited Geotechnical/Geologic Evaluation
Canyon Lake WTP – Facilities Master Plan
Elsinore Valley Water District (EVMWD)
Canyon Lake, California

In accordance with your authorization and signed contract dated June 30, 2017, we completed our geotechnical/geology evaluation of the subject site. This report summarizes our findings and presents our opinions regarding the potential geotechnical/geologic constraints associated with the proposed development. The results of our evaluation indicate that the proposed cut slopes may require blasting at depth greater than 20 feet below ground surface (BGS). We recommend that further evaluation be performed once final site development plans become available.

If you have any questions regarding this report, please do not hesitate to contact the undersigned. We appreciate this opportunity to be of service on this project.

Respectfully submitted,

LEIGHTON CONSULTING, INC.



Simon I. Saiid, GE 2641
Principal Engineer





Robert F. Riha, CEG 1921
Senior Principal Geologist



Distribution: (3) Addressee (plus one PDF)

41715 Enterprise Circle N., Suite 103 ▪ Temecula, CA 92590-5661
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Appendix A – Results of seismic refraction survey
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1.0 INTRODUCTION

1.1 Purpose and Scope

The purpose of this limited geologic evaluation was to explore the site geologic conditions of the proposed cut slope and discuss potential geotechnical/geologic concerns or factors that may impact the design and constructability of the proposed improvements. Our scope of work included the following activities:

- Review of provided site plan, as well as pertinent in-house and published data,
- Site reconnaissance and visual observations of current surface conditions, and collect a surface soils sample for laboratory testing of expansion index and soluble sulfate content.
- Perform a seismic refraction survey to evaluate rock hardness/rippability.
- Preparation of this report presenting our findings and recommendations.

1.2 Site Location and Project Description

The Canyon Lake Water Treatment Plant (CLWTP) is located at the southern end of Canyon Lake along the western side of the existing dam *(see Figure 1)*. Based on information provided, we understand that an assessment and optimization evaluation of the CLWTP is being performed, which may include cutting into the existing slope located along the western side of the plant (see Figure 3). The proposed slope (2H:1V) may extend up to 45 in height and require cuts up to 30 feet deep. The new graded area is proposed to host flocculation and sedimentation basin and chemical systems storage and feed facility.

2.0 SITE GEOLOGY

2.1 Regional Geology

As shown on Figure 2, *Regional Geology Map*, the site is underlain by metamorphic rock formation locally known as Bedford Canyon formation.

2.2 Site Geology / Surface Conditions

Based on site visit performed on February 6, 2018, the site surface and/or geologic conditions may be summarized as follows:

- Existing undocumented fill soils were observed along the toe of the existing hillside, presumably due to the creation of an access road going up the slope.
- Geologic mapping of exposed rock in the northern portion of the proposed cut slope indicate that potentially adversely/out-of-slope dipping beds and joints may be encountered in the proposed new cut slope (see Figure 3).
- Based on our laboratory testing, onsite surficial soils have very low expansion potential and negligible concentrations of soluble sulfates.

2.3 Groundwater

Groundwater is not expected to be encountered during excavation of the proposed slope. However, depending on rainfall and seasonal variation, groundwater seepage may exist within open joints or rock fracturing.

2.4 Faulting

No active or inactive fault traces are known to traverse the site (Hart, 2007). The site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone or County of Riverside Fault Zone (Riverside County).

2.5 Rock Rippability

A seismic refraction survey was performed in the proposed cut area by Southwest Geophysics, Inc. (Appendix A). Six (6) seismic refraction traverses were conducted in order to assess rock rippability characteristics and to develop subsurface velocity profiles of the areas surveyed. The seismic refraction method uses first-arrival times of refracted seismic waves to estimate the thicknesses and seismic velocities of subsurface layers. Additional readings/points were taken to obtain both vertical and

lateral velocity information so tomography models can be provided. Tomography is an enhanced seismic refraction method that allows changes in layer velocity to be revealed as gradients rather than discrete contacts, which typically are more representative of actual conditions.

The results of the survey indicate that marginally rippable rock using Caterpillar D-9 dozer with a single shank should be anticipated to a depth of 15 to 20 feet BGS or may vary depending on location. However, non-rippable rock and probable blasting (or other rock reducing techniques) should be anticipated for deeper excavations or where measured shear wave velocities exceed 4,000 foot-per-second (as shallow as 10 to 15 feet in some areas such as SL-2 and SL-5). The relatively shallow and hard rock zones (yellow and red colors) are likely due to resistant corestones/ remnant boulders, dikes, and/or less weathering. Detailed discussion and graphical presentation of the seismic refraction survey is presented in whole as Appendix A. The approximate locations of the survey transects are indicated on Figure 3.

3.0 CONCLUSIONS AND RECOMMENDATIONS

The results of our limited geologic evaluation indicate that the proposed cut slope is considered feasible from a geologic perspective.

3.1 Slope Stability

Based on our evaluation, the proposed 2:1 cut slope in metamorphic rock is considered globally stable. Steeper slopes (1.5:1) may also be considered in this formation provided further geologic mapping performed during grading to verify the absence of any adverse geologic conditions such as “bedding” planes that are dipping more steeply than the proposed cut slope surface.

3.2 Suitability of Site Soils for Fills

The onsite soils are generally suitable for re-use as compacted fill, provided they are free of debris and organic matter. Topsoil and vegetation layers, root zones, and similar surface materials should be striped and stockpiled or removed from the site. Excavation in rock may generate oversize rock (larger than 12-inches) and may require special handling/reduction in size if used to make onsite fill material.

3.3 Additional Geotechnical Services

As discussed previously in this report, additional studies will be required to further verify the general findings in this report and provide pertinent geotechnical/geologic information for proper design and construction of the proposed improvements. These additional studies are expected to include a site-specific field exploration (geotechnical borings) and geologic mapping of exposed slopes.

4.0 LIMITATIONS

This report was based primarily upon data obtained from a review of available published date and limited information and observations. Such information is necessarily incomplete. It is expected that site-specific subsurface geotechnical data is necessary for future phases of development. The nature of many sites is such that differing characteristics can be experienced within small distances and under various climatic conditions. This report was prepared in accordance with generally accepted geologic and geotechnical engineering practices at this time in California. No warranty is expressed or implied.

This report was prepared solely for our client for the proposed site grading/cut slope. This report is not authorized for use by, and is not to be relied upon by any party except our client with whom Leighton Consulting, Inc. has contracted for the work. Use of or reliance on this report by any other party is at that party's risk. Unauthorized use of or reliance on this report constitutes an agreement to defend and indemnify Leighton Consulting, Inc. from and against any liability which may arise as a result of such use or reliance, regardless of any fault, negligence, or strict liability of Leighton Consulting, Inc.

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.

APPENDIX A

RESULTS OF SEISMIC REFRACTION SURVEY

SEISMIC SURVEY
CANYON LAKE WATER TREATMENT PLANT
CANYON LAKE, CALIFORNIA

PREPARED FOR:
Leighton Consulting, Inc.
41715 Enterprise Circle N. Suite 103
Temecula, CA 92590

PREPARED BY:
Southwest Geophysics, Inc.
8057 Raytheon Road, Suite 9
San Diego, CA 92111

March 16, 2018
Project No. 118090

SOUTHWEST GEOPHYSICS, INC.
YOUR SUBSURFACE SOLUTION

March 16, 2018
Project No. 118090

Mr. Jeffrey T. Deland
Leighton Consulting, Inc.
41715 Enterprise Circle N. Suite 103
Temecula, CA 92590

Subject: Seismic Refraction Survey
EVMWD Canyon Lake Water Treatment Plant
Canyon Lake, California

Dear Mr. Deland:

In accordance with your authorization, we have performed a seismic refraction survey pertaining to proposed improvements at the EVMWD Canyon Lake Water Treatment Plant located in Canyon Lake, California. Specifically, our survey consisted of performing six seismic refraction traverses at the project site. The purpose of our study was to develop subsurface velocity profiles of the areas surveyed, and to assess the apparent rippability of the subsurface materials. Our services were conducted on February 28, 2018. This data report presents our survey methodology, equipment used, analysis, and results.

We appreciate the opportunity to be of service on this project. Should you have any questions related to this report, please contact the undersigned at your convenience.

Sincerely,
SOUTHWEST GEOPHYSICS, INC.

Afrildo Iko Syahrial
Project Geologist/Geophysicist

Hans van de Vrugt, C.E.G., P.Gp.
Principal Geologist/Geophysicist

REGISTERED GEOPHYSICIST
Hans van de Vrugt
No. 1012
Exp. 2/29/20
STATE OF CALIFORNIA

AMB/AIS/PFL/HV/hv

Distribution: Addressee (electronic)

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1. INTRODUCTION

In accordance with your authorization, we have performed a seismic refraction survey pertaining to proposed improvements at the EVMWD Canyon Lake Water Treatment Plant located in Canyon Lake, California (Figure 1). Specifically, our survey consisted of performing six seismic refraction traverses at the project site. The purpose of our study was to develop subsurface velocity profiles of the areas surveyed, and to assess the apparent rippability of the subsurface materials. Our services were conducted on February 28, 2018. This data report presents our survey methodology, equipment used, analysis, and results.

2. SCOPE OF SERVICES

Our scope of services included:

- Performance of six seismic P-wave refraction lines at the project site, SL-1 through SL-6.
- Compilation and analysis of the data collected.
- Preparation of this data report presenting our results.

3. SITE DESCRIPTION AND PROJECT DESCRIPTION

The study area is atop a hill located along Longhorn Drive, just west of the water treatment plant in Canyon Lake (Figure 1). The study area is undeveloped and includes a moderately steep slope dipping to the east along the main road to the water treatment plant, as well as a relatively flat area on top of the hill. The site is generally covered with annual grass, small shrubs, and loose rock. Figures 2 and 3 depict the general site conditions in the study area and along the seismic lines.

Based on our discussions with you, it is our understanding that your office is conducting a geotechnical evaluation for proposed improvements at the site. Cuts up to 30 feet deep are expected. The results of our survey will be used in the formulation of design and construction parameters for the project.

4. SURVEY METHODOLOGY AND ANALYSIS

As previously indicated, the primary purpose of our services was to characterize the subsurface conditions at pre-selected locations through the collection of seismic data. The seismic refraction method uses first-arrival times of refracted seismic waves to estimate the thicknesses and seismic velocities of subsurface layers. Seismic P-waves (compression waves) generated at the surface are refracted at boundaries separating materials of contrasting velocities. These refracted seismic waves are then detected by a series of surface vertical component 14-Hz geophones and recorded with a 24-channel Geometrics Geode seismograph. The travel times of the seismic P-waves are used in conjunction with the shot-to-geophone distances to obtain thickness and velocity information on the subsurface materials. In general, the effective depth of evaluation for a seismic refraction traverse is approximately one-third to one-fifth the length of the traverse

Six seismic profiles (SL-1 through SL-6) were conducted at the site and multiple shot points (signal generator locations) were conducted along the lines at the ends, midpoint, and intermediate points between the ends and the midpoint. The P-wave signal (shot) was generated using a 20-pound hammer and an aluminum plate. The locations of the profiles, which were selected by your office, are depicted on Figure 2.

The refraction method requires that subsurface velocities increase with depth. A layer having a velocity lower than that of the layer above will not generally be detectable by the seismic refraction method and, therefore, could lead to errors in the depth calculations of subsequent layers. In addition, lateral variations in velocity, such as those caused by buried boulders, fractures, dikes, etc. can result in the misinterpretation of the subsurface conditions.

In general, the seismic P-wave velocity of a material can be correlated to rippability (see Table 1 below), or to some degree “hardness.” Table 1 is based on published information from the Caterpillar Performance Handbook (Caterpillar, 2011) as well as our experience with similar materials, and assumes that a Caterpillar D-9 dozer ripping with a single shank is used. We emphasize that the cutoffs in this classification scheme are approximate and that rock characteristics, such as fracture spacing and orientation, play a significant role in determining

rock quality or rippability. The rippability of a mass is also dependent on the excavation equipment used and the skill and experience of the equipment operator.

For trenching operations**,** the rippability values should be scaled downward. For example, velocities as low as 3,500 feet/second may indicate difficult ripping during trenching operations. In addition, the presence of boulders, which can be troublesome in a narrow trench, should be anticipated.

Table 1 – Rippability Classification

Seismic P-wave Velocity	Rippability
0 to 2,000 feet/second	Easy
2,000 to 4,000 feet/second	Moderate
4,000 to 5,500 feet/second	Difficult, Possible Blasting
5,500 to 7,000 feet/second	Very Difficult, Probable Blasting
Greater than 7,000 feet/second	Blasting Generally Required

It should be noted that the rippability cutoffs presented in Table 1 are slightly more conservative than those published in the Caterpillar Performance Handbook. Accordingly, the above classification scheme should be used with discretion, and contractors should not be relieved of making their own independent evaluation of the rippability of the on-site materials prior to submitting their bids.

5. DATA ANALYSIS

The collected data were processed using SIPwin (Rimrock Geophysics, 2003), a seismic interpretation program, and analyzed using SeisOpt Pro (Optim, 2008). SeisOpt Pro uses first arrival picks and elevation data to produce subsurface velocity models through a nonlinear optimization technique called adaptive simulated annealing. The resulting velocity model provides a tomography image of the estimated geologic conditions. Both vertical and lateral velocity information is contained in the tomography model. Changes in layer velocity are revealed as gradients rather than discrete contacts, which typically are more representative of actual conditions.

6. RESULTS AND CONCLUSIONS

As previously indicated, six seismic P-wave refraction traverses were conducted at the project site. Figures 4a through 4f present the velocity models generated from our analysis. Based on the results it appears the study areas are underlain by low velocity materials (e.g., colluvium and top-soil) in the near surface and higher velocity materials (e.g., crystalline bedrock) at depth. Distinct vertical and lateral velocity variations are evident in the models. Moreover, the degree of bed-rock weathering and the depth to bedrock appears to be highly variable across the study area. In addition, remnant boulders appear to be present in the subsurface in some areas.

Based on the refraction results, variability in the excavatability (including depth of rippability) of the subsurface materials should be expected across the project area. Furthermore, blasting may be required depending on the excavation depth, location, equipment used, and desired rate of production. In addition, oversized materials should be expected. A contractor with excavation experience in similar difficult conditions should be consulted for expert advice on excavation methodology, equipment and production rate.

7. LIMITATIONS

The field evaluation and geophysical analyses presented in this report have been conducted in general accordance with current practice and the standard of care exercised by consultants per-forming similar tasks in the project area. No warranty, express or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation de-tailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be present. Uncertainties relative to subsurface condi-tions can be reduced through additional subsurface exploration. Additional subsurface surveying will be performed upon request.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Southwest Geophys-ics, Inc. should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document. This report is

intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

8. SELECTED REFERENCES

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SITE LOCATION MAP

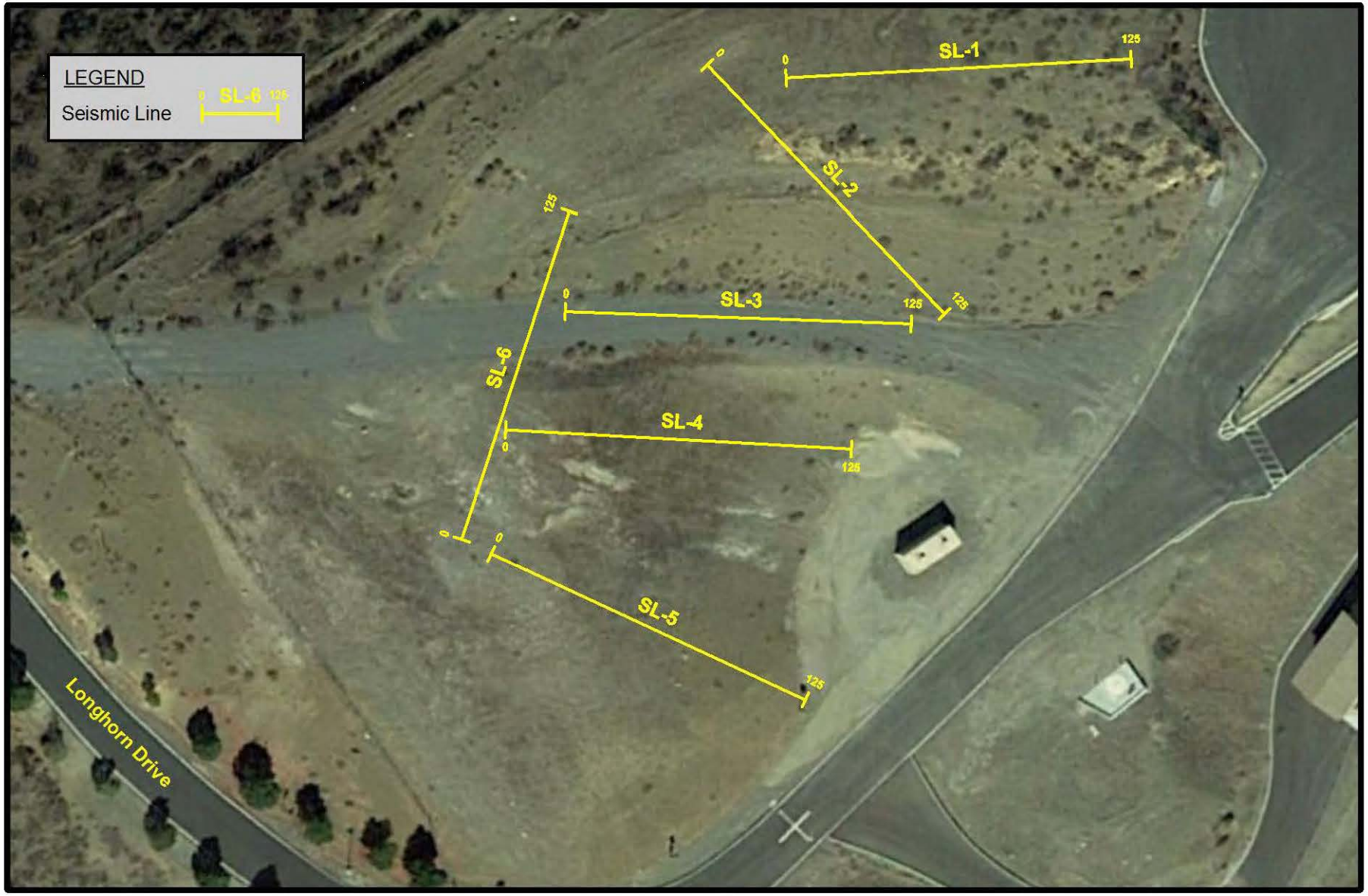
N

EVMWD Canyon Lake Water Treatment Plant
Canyon Lake, California

Project No.: 118090 | Date: 03/18

SOUTHWEST GEOPHYSICS INC.

Figure 1



LINE LOCATION MAP
(SL-1 through SL-6)

N

EVMWD Canyon Lake Water Treatment Plant
Canyon Lake, California

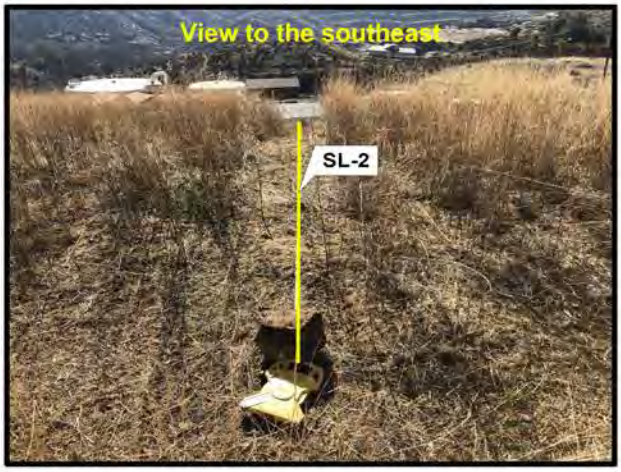
Project No.: 118090 | Date: 03/18

SOUTHWEST GEOPHYSICS INC.

Figure 2

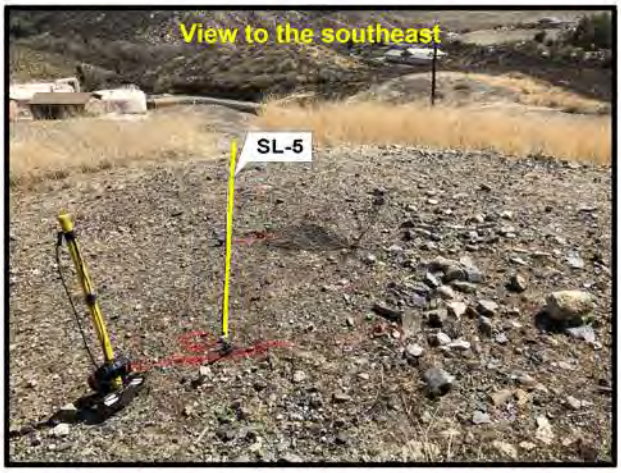
0 50 100
approximate scale in feet













SITE PHOTOGRAPHS

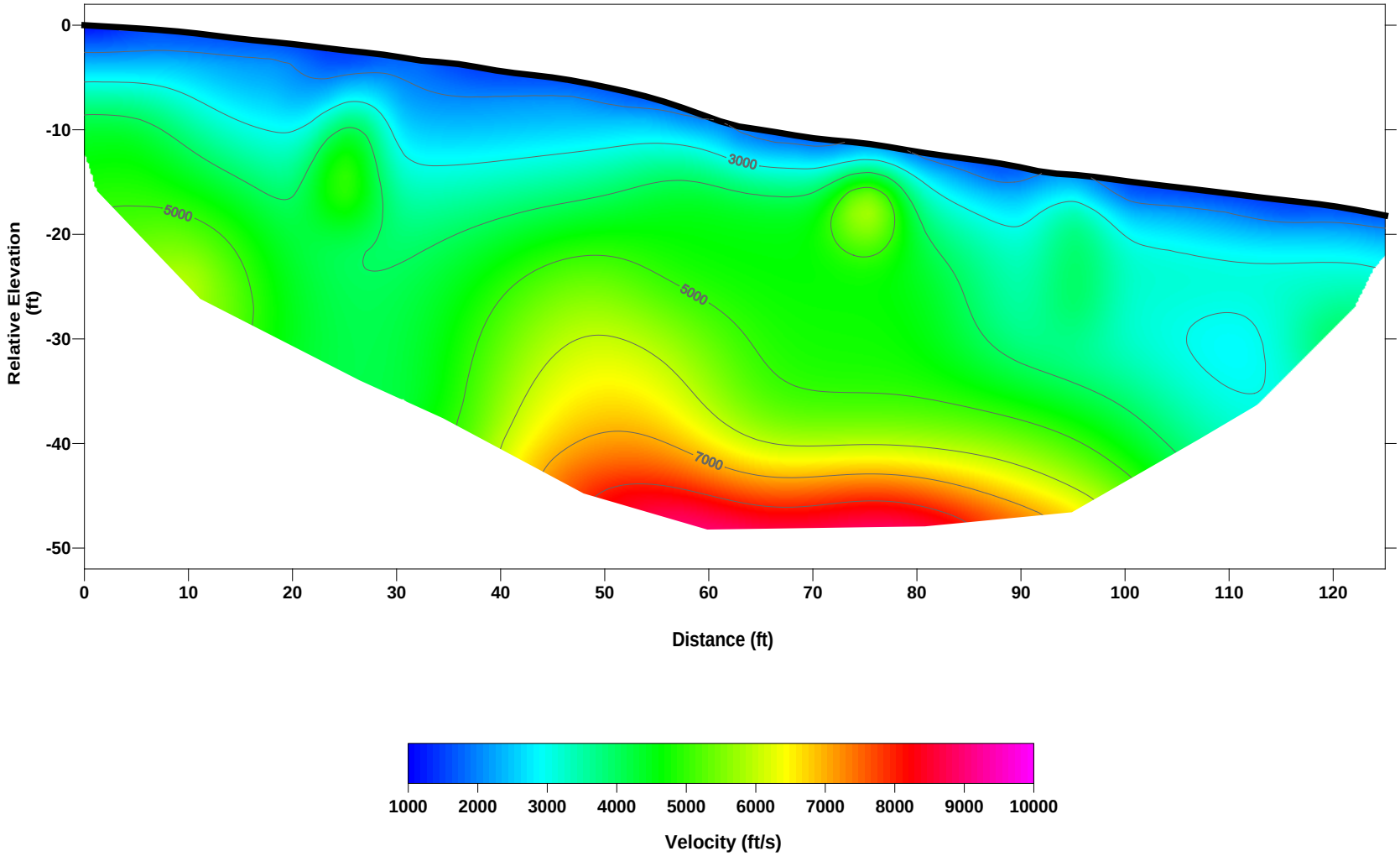
EVMWD Canyon Lake Water Treatment Plant
Canyon Lake, California

Project No.: 118090 | Date: 03/18

SOUTHWEST GEOPHYSICS INC.

Figure 3

TOMOGRAPHY MODEL



P-WAVE PROFILE
SL-1

EVMWD Canyon Lake Water Treatment Plant
Canyon Lake, California

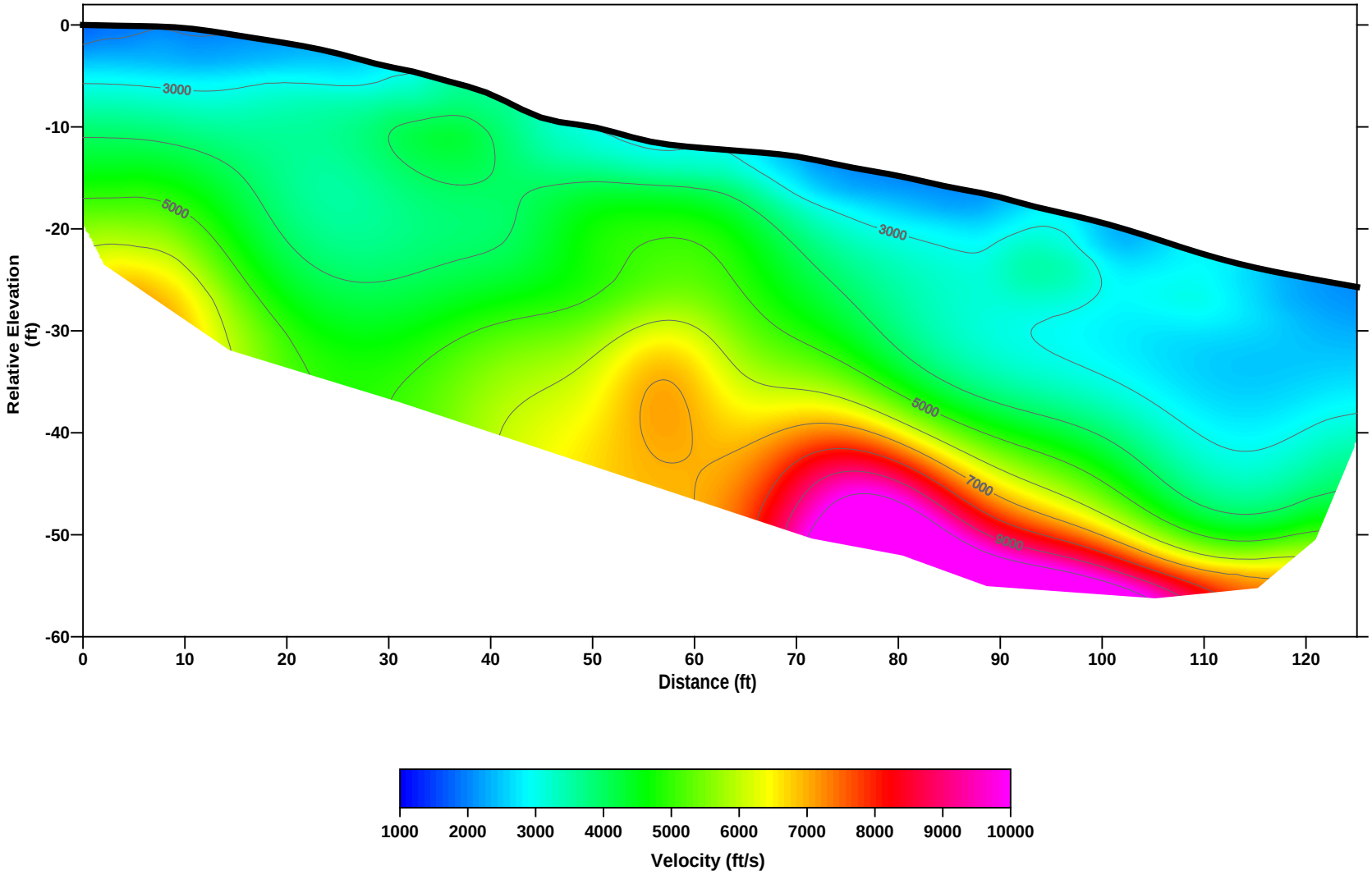
Project No.: 118090 | Date: 03/18

SOUTHWEST GEOPHYSICS INC.

Figure 4a

Note: Contour Interval = 1,000 feet per second

TOMOGRAPHY MODEL



P-WAVE PROFILE
SL-2

EVMWD Canyon Lake Water Treatment Plant
Canyon Lake, California

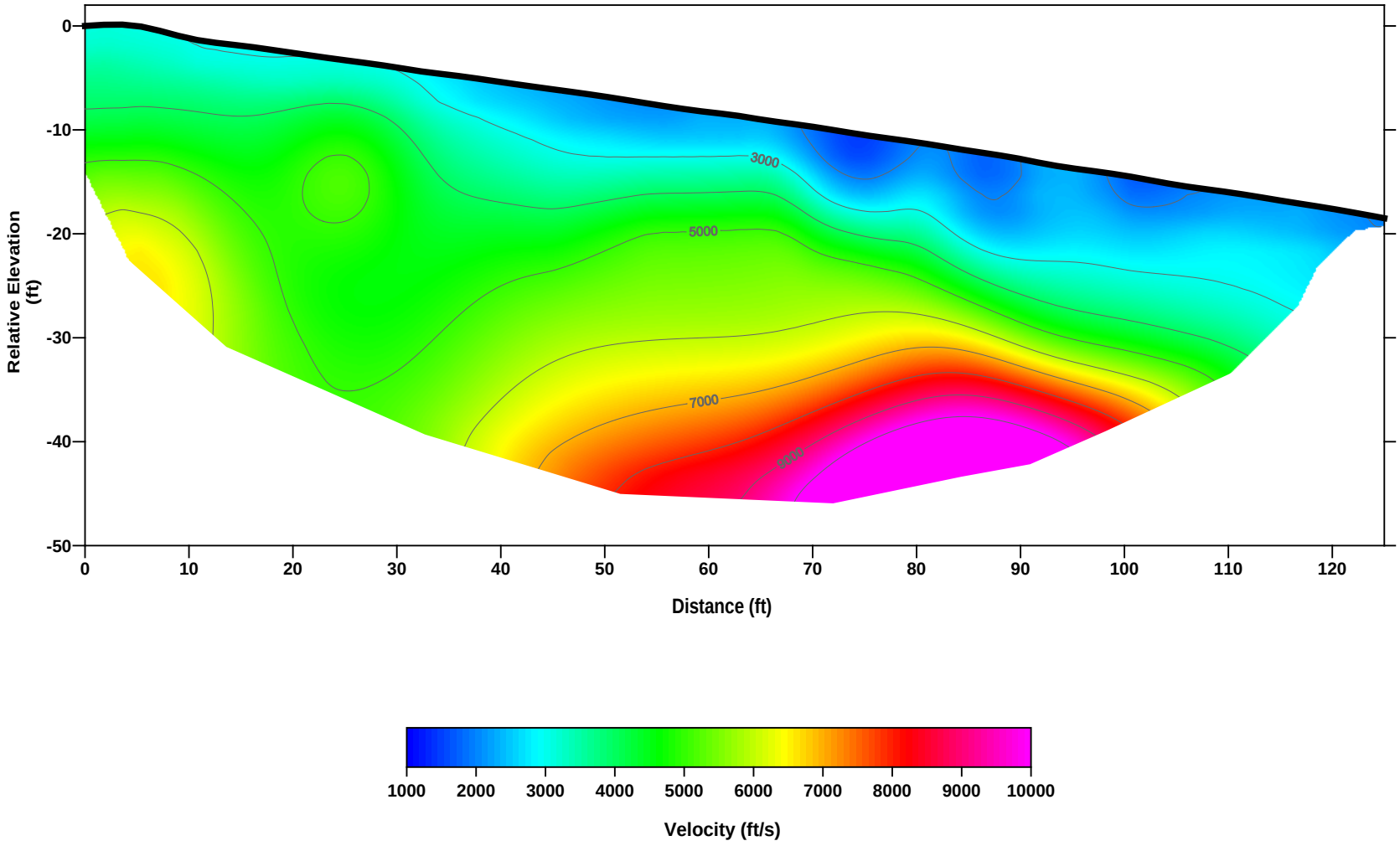
Project No.: 118090 | Date: 03/18

SOUTHWEST GEOPHYSICS INC.

Figure 4b

Note: Contour Interval = 1,000 feet per second

TOMOGRAPHY MODEL



P-WAVE PROFILE
SL-3

EVMWD Canyon Lake Water Treatment Plant
Canyon Lake, California

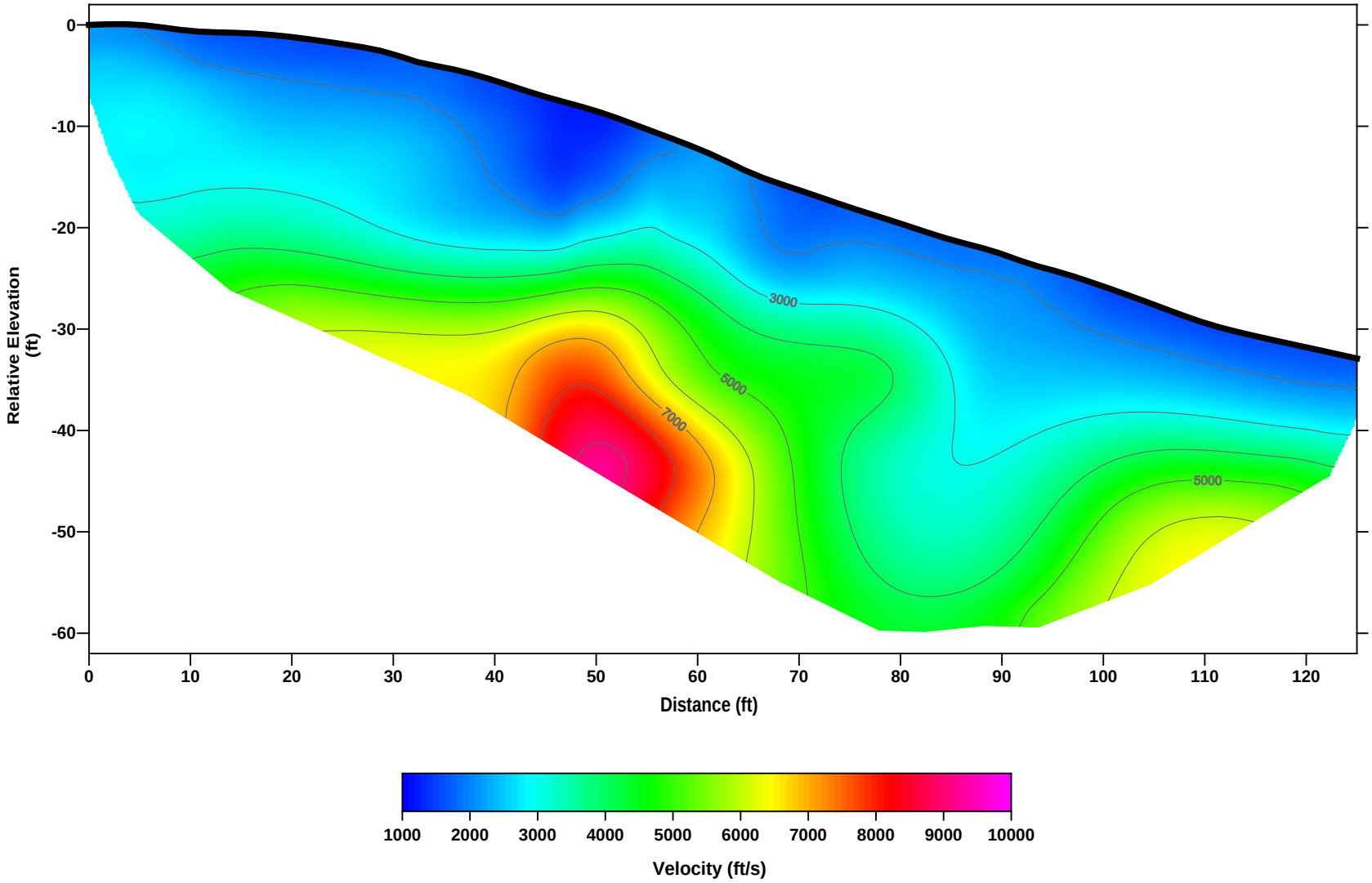
Project No.: 118090 | Date: 03/18

SOUTHWEST GEOPHYSICS INC.

Figure 4c

Note: Contour Interval = 1,000 feet per second

TOMOGRAPHY MODEL



P-WAVE PROFILE
SL-4

EVMWD Canyon Lake Water Treatment Plant
Canyon Lake, California

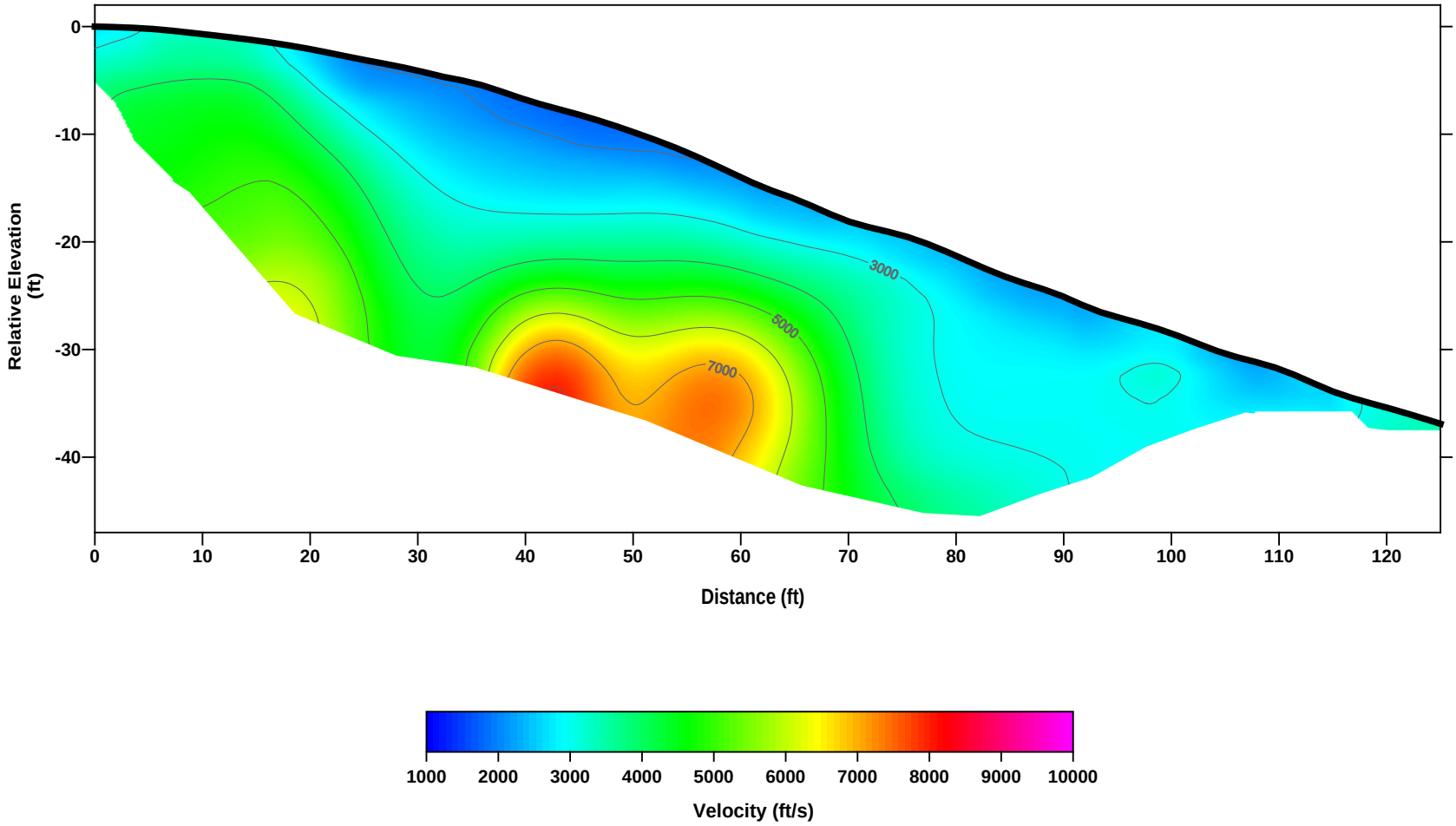
Project No.: 118090 | Date: 03/18

SOUTHWEST GEOPHYSICS INC.

Figure 4d

Note: Contour Interval = 1,000 feet per second

TOMOGRAPHY MODEL



P-WAVE PROFILE
SL-5

EVMWD Canyon Lake Water Treatment Plant
Canyon Lake, California

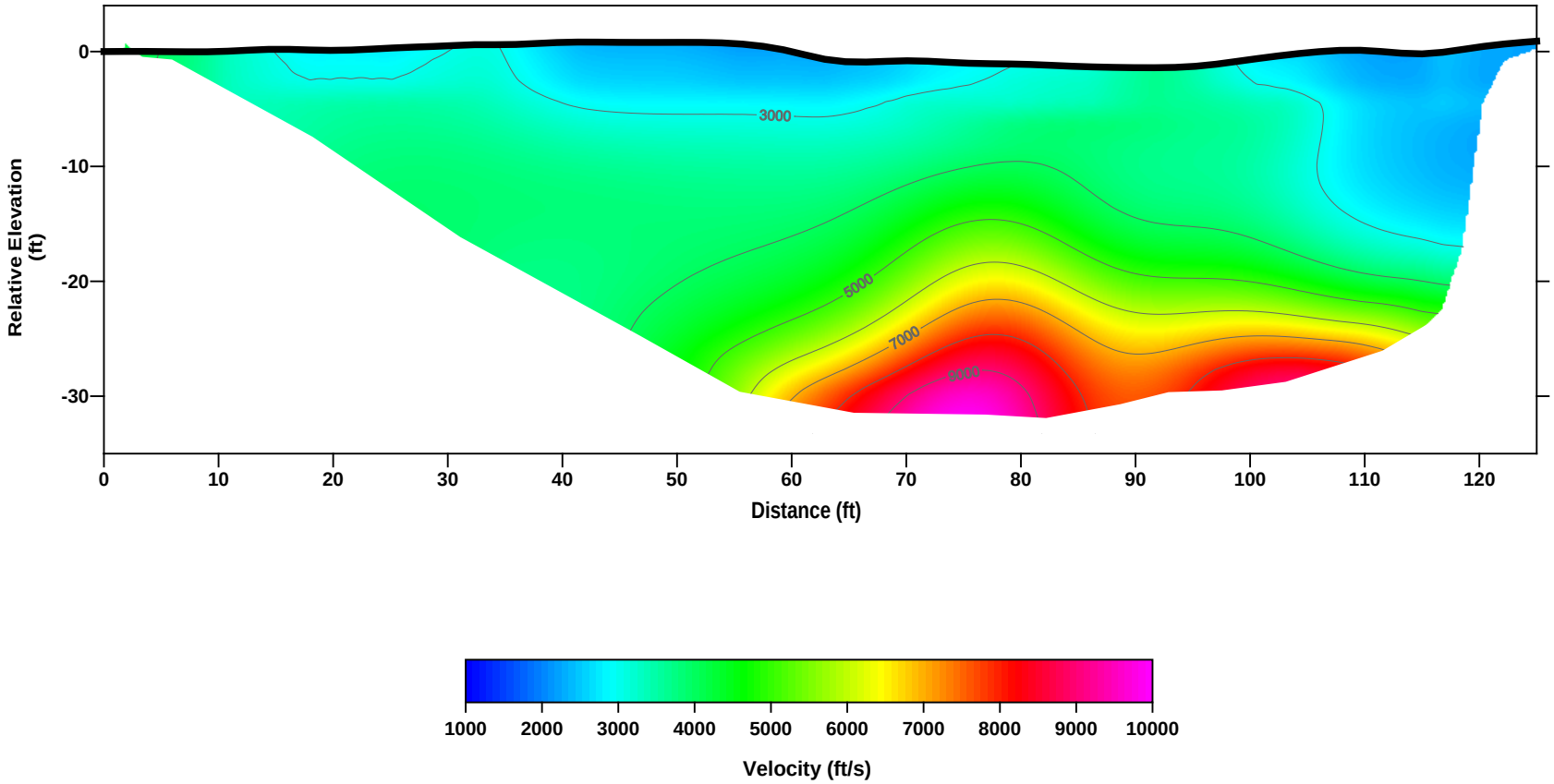
Project No.: 118090 | Date: 03/18

SOUTHWEST GEOPHYSICS INC.

Figure 4e

Note: Contour Interval = 1,000 feet per second

TOMOGRAPHY MODEL



P-WAVE PROFILE
SL-6

EVMWD Canyon Lake Water Treatment Plant
Canyon Lake, California

Project No.: 118090 | Date: 03/18

SOUTHWEST GEOPHYSICS INC.

Figure 4f

Note: Contour Interval = 1,000 feet per second

APPENDIX B

RESULTS OF GEOTECHNICAL LABORATORY TESTING

Leighton

EXPANSION INDEX of SOILS

ASTM D 4829

Project Name:	KJ-EVMWD CLWTP	Tested By:	F. Mina	Date:	2/28/18
Project No. :	11708.001	Checked By:	M. Vinet	Date:	3/2/18
Boring No.:	N/A	Depth:	N/A		
Sample No. :	B-1	Location:	N/A		
Sample Description:	Silty Sand with Gravel (SM), Brown.				

Dry Wt. of Soil + Cont. (gm.)	4958.4
Wt. of Container No. (gm.)	0.0
Dry Wt. of Soil (gm.)	4958.4
Weight Soil Retained on #4 Sieve	1490.8
Percent Passing # 4	69.9

MOLDED SPECIMEN	Before Test	After Test
Specimen Diameter (in.)	4.01	4.01
Specimen Height (in.)	1.0000	1.0129
Wt. Comp. Soil + Mold (gm.)	620.3	626.7
Wt. of Mold (gm.)	199.1	199.1
Specific Gravity (Assumed)	2.70	2.70
Container No.	7	7
Wet Wt. of Soil + Cont. (gm.)	466.9	626.7
Dry Wt. of Soil + Cont. (gm.)	443.7	388.6
Wt. of Container (gm.)	166.9	199.1
Moisture Content (%)	8.4	10.0
Wet Density (pcf)	127.1	127.3
Dry Density (pcf)	117.2	115.7
Void Ratio	0.438	0.457
Total Porosity	0.305	0.314
Pore Volume (cc)	63.1	65.8
Degree of Saturation (%) [S meas]	**51.7**	**59.4**

SPECIMEN INUNDATION in distilled water for the period of 24 h or expansion rate < 0.0002 in./h.

Date	Time	Pressure (psi)	Elapsed Time (min.)	Dial Readings (in.)
2/28/18	13:00	1.0	0	0.5000
2/28/18	13:10	1.0	10	0.5000
	Add Distilled Water to the Specimen			
3/1/18	8:15	1.0	1145	0.5129
3/1/18	9:15	1.0	1205	0.5129

Expansion Index (EI meas) = ((Final Rdg - Initial Rdg) / Initial Thick.) x 1000	12.9
Expansion Index (Report) = Nearest Whole Number or Zero (0) if Initial Height is > than Final Height	**13**

Leighton

TESTS for SULFATE CONTENT

Project Name: KJ-EVMWD CLWTP Tested By : M. Vinet Date: 03/01/18

Project No. : 11708.001 Data Input By: M. Vinet Date: 03/02/18

Boring No.	N/A			
Sample No.	B-1			
Sample Depth (ft)	N/A			
Soil Identification:	SM			
Wet Weight of Soil + Container (g)	100.00			
Dry Weight of Soil + Container (g)	100.00			
Weight of Container (g)	0.00			
Moisture Content (%)	0.00			
Weight of Soaked Soil (g)	100.00			

SULFATE CONTENT, DOT California Test 417, Part II

Beaker No.	1			
Crucible No.	1			
Furnace Temperature (°C)	850			
Time In / Time Out	Timer			
Duration of Combustion (min)	45			
Wt. of Crucible + Residue (g)	25.7084			
Wt. of Crucible (g)	25.7062			
Wt. of Residue (g) (A)	0.0022			
PPM of Sulfate (A) x 41150	90.53			
PPM of Sulfate, Dry Weight Basis	**91**			

Appendix F

Paleontological Resources Assessment (bound separately)

Appendix G

Noise Technical Report

Canyon Lake Water Treatment Plant Phase I Improvements Project

Noise Technical Report

September 2023 | 00407.00046.001

Prepared for:

Elsinore Valley Municipal Water District
31315 Chaney Street
Lake Elsinore, CA 92530

Prepared by:

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

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ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
CadnaA	Computer Aided Noise Abatement
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
City	City of Canyon Lake
CLWTP	Canyon Lake Water Treatment Plant
CNEL	Community Noise Level Equivalent
dB	decibel
dBA	A-weighted decibel
EVMWD	Elsinore Valley Municipal Water District
hp	horsepower
Hz	hertz
I-	Interstate
in	inch
kHz	kilohertz
L_{DN}	Day Night sound level
L_{EQ}	time-averaged noise level
NRC	Noise Reduction Coefficient
NSLU	noise-sensitive land use
PPV	peak particle velocity
project	Canyon Lake Water Treatment Plant Phase 1 Improvements Project
RCNM	Roadway Construction Noise Model
sec	second
SPL	sound pressure level
STC	Sound Transmission Class
USDOT	U.S. Department of Transportation

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EXECUTIVE SUMMARY

The Canyon Lake Water Treatment Plant Phase 1 Improvements Project (project) is proposed by the Elsinore Valley Municipal Water District to address current capacity issues at the Canyon Lake Water Treatment Plant and improve water quality in Canyon Lake. The project would involve demolition of the existing intake pump station, static mixers, clarifier, and chemical feed area and construction of a new intake pump station, static mixers, sedimentation/flocculation basins, treatment systems, pump stations, and ancillary buildings.

On-site construction of the project would not result in noise levels exceeding the City of Canyon Lake noise ordinance limits. Construction of the off-site portion of the project could generate noise levels in excess of the City of Lake Elsinore limits at nearby residences. Therefore, impacts associated with construction noise levels would be potentially significant. Hauling trips through the neighborhood west of the project site would result in increased noise levels but would be limited to the short term. Noise reduction measures during construction of the water pipeline are proposed to reduce impacts to a less than significant level by implementing mitigation measure NOI-1. Mitigation measure NOI-1 would require construction noise control during pipeline construction occurring within 100 feet of residences.

The operation of the project would generate noise levels at residences in the City of Lake Elsinore that would exceed the nighttime exterior noise threshold for single-family residences. Impacts would be reduced to a less than significant level by implementing mitigation measure NOI-2, which would require the project to reduce noise levels at residential properties by installing permanent noise reduction features at or around the booster pump station and flocculation basins.

The increase in traffic from operation of the project to the existing traffic on adjacent roadways would not cause a perceptible increase in noise levels; therefore, impacts from traffic noise would be less than significant.

Vibration generated by construction and operation of the project would not exceed applicable structural damage or human annoyance criteria and impacts related to vibration would be less than significant. People working at the project site would not be exposed to excessive aircraft noise and no impact would occur.

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1.0 INTRODUCTION

This report provides an analysis of potential impacts related to noise during construction and operation of the Canyon Lake Water Treatment Plant (CLWTP) Phase 1 Improvements Project (project). Impacts related to noise are evaluated in accordance with the relevant issues listed in the Noise section of Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

1.1 PROJECT LOCATION

The CLWTP is located east of Interstate (I-) 15 and west of I-215 in Riverside County, California. It is located within the City of Canyon Lake (City) and borders the City of Lake Elsinore on the southern end of Canyon Lake. The site can be accessed via Longhorn Drive or Via De La Valle, which connect to Old Newport Road and the access roads through the CLWTP. The overall CLWTP site is approximately 12.6 acres, or 548,300 square feet. The site zoning is CF – Community Facility. Refer to Figure 1, *Regional Location,* and Figure 2, *Aerial Photograph*.

1.2 PROJECT DESCRIPTION

The Elsinore Valley Municipal Water District (EVMWD) is proposing to implement new treatment facilities at the CLWTP. The project is intended to address current capacity issues and improve water treatment systems for the water pumped from Canyon Lake to EVMWD customers.

The proposed project would demolish the existing intake pump station, static mixers, upflow clarifier, and chemical feed area shown in Figure 3, *Existing Facility*. The project would construct a new intake pump station at the lake; new static mixers and sedimentation/flocculation basins; new equipment for per- and polyfluoroalkyl substances, taste, and odor treatment; new booster and backwash pump stations; and chemical and maintenance buildings. The proposed improvements, as well as construction staging areas, would be located within the boundary of the existing CLWTP. See Figure 4, *Proposed Improvements.*

2.0 ENVIRONMENTAL SETTING

2.1 DESCRIPTORS AND TERMINOLOGY

2.1.1 Noise and Sound Descriptors and Terminology

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, with a specified duration. The Community Noise Equivalent Level (CNEL) is a 24-hour average, where noise levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dBA weighting, and sound levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dBA weighting. This is similar to the Day Night sound level (L_{DN}), which is a 24-hour average with an added 10 dBA weighting on the same nighttime hours but no added weighting on the evening hours. Sound levels expressed in CNEL are always based on dBA. These metrics are used to express noise levels for both measurement and municipal regulations, as well as for land use guidelines and enforcement of noise ordinances.

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound. In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver contribute to the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. A logarithmic scale is used to describe sound pressure level (SPL) in terms of dBA units. The threshold of hearing for the human ear is about 0 dBA, which corresponds to 20 micro-Pascals. Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dBA increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear can discern 1 dBA changes in sound levels, when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000 Hz to 8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dBA are generally not perceptible. It is widely accepted, however, that people begin to detect sound level increases of 3 dBA in typical noisy environments. Further, a 5 dBA increase is generally perceived as a distinctly noticeable increase, and a 10-dBA increase is generally perceived as a doubling of loudness.

2.1.2 Vibration Descriptors and Terminology

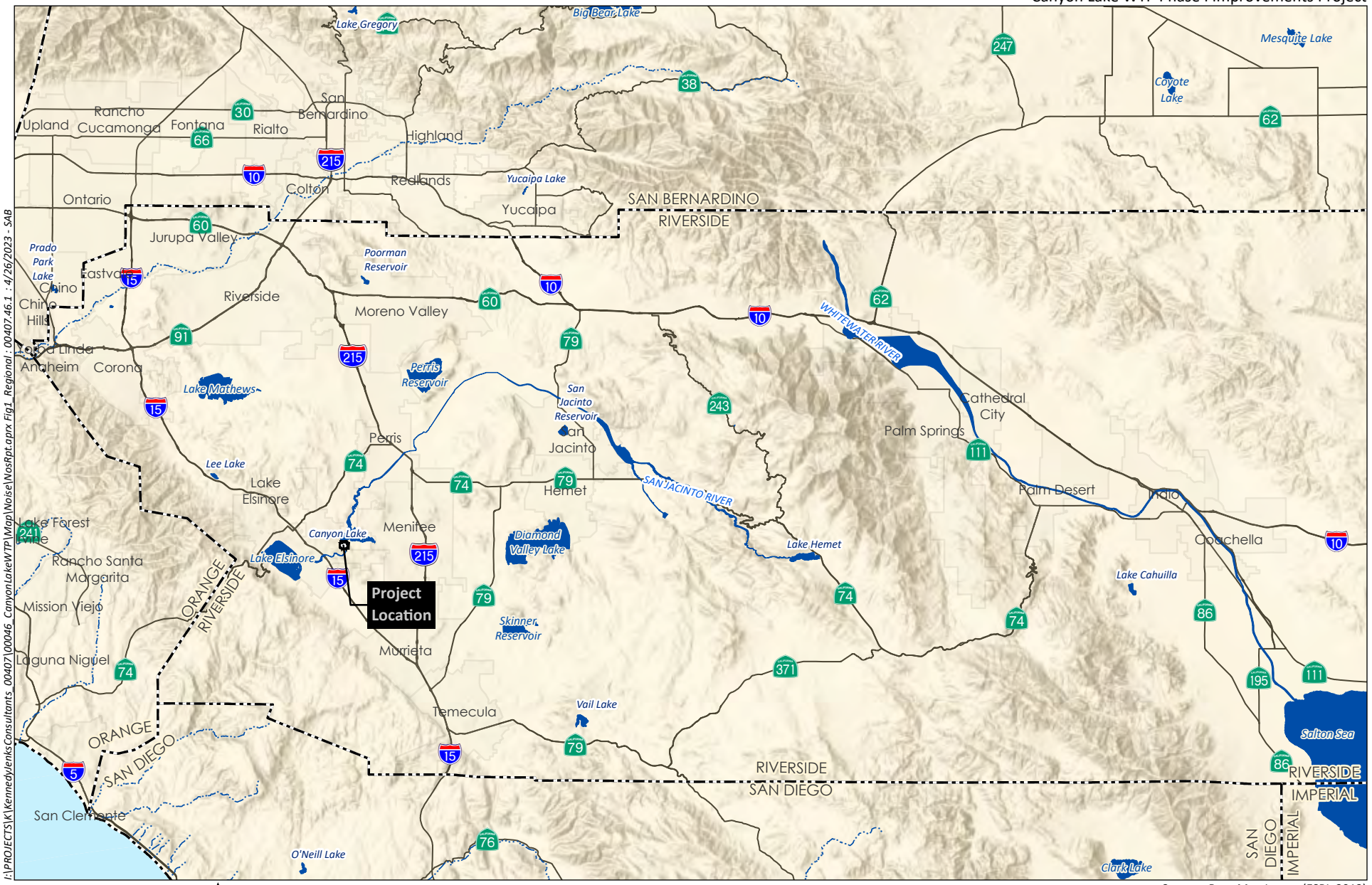
Vibration is measured in feet or inches (in). Acceleration is measured by comparing acceleration to that of the Earth's gravity, and this unit is "G." These units of acceleration or velocity are relative to time in seconds (sec) and are noted as in/sec^2 for acceleration and in/sec for velocity. Displacement is not relative to time and is only shown as inches.

Vibration effects can be described by its peak and/or root mean square amplitudes. Building damage is often discussed in terms of peak velocity, or peak particle velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration signal. PPV is related to the stresses that are experienced by buildings; it is often used in monitoring of blasting vibration and to discuss construction vibration.

2.2 REGULATORY SETTING

2.2.1 California Noise Control Act

The California Noise Control Act is a section within the California Health and Safety Code that describes excessive noise as a serious hazard to the public health and welfare and that exposure to certain levels



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Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1



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0 600 Feet

Source: Aerial (Maxar, 2022)

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Aerial Photograph

Figure 2



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0 150 Feet

Source: Aerial (County of Riverside, 2020)

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Existing Facility

Figure 3



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Source: Aerial (County of Riverside, 2020)

HELIX Environmental Planning

Proposed Improvements

Figure 4

of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the State to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

2.2.2 City of Canyon Lake

2.2.2.1 Canyon Lake Municipal Code

Sound Amplification – Section 11.15.030

No person shall amplify sound contrary to any of the following:

(a) The only amplified sound permitted shall be either music or the human voice or both.

(b) Notwithstanding (a) above, the volume of amplified sound shall not exceed the noise levels set forth herein (Table 1, *Sound Amplification Maximum Noise Levels*) when measured outdoors at or beyond the property line of the property from which the sound emanates.

Table 1
SOUND AMPLIFICATION MAXIMUM NOISE LEVELS

Time Period	Maximum Noise Level
10 p.m. – 7 a.m.	60 dBA
7 a.m. – 10 p.m.	80 dBA

Source: Canyon Lake Municipal Code Section 11.15.030
dBA = A-weighted decibel

Unusual Noises or Sounds – Section 11.15.040

It is unlawful for any person to willfully make, cause or suffer or permit to be made, or caused, any loud unnecessary noises or sounds which unreasonably disturb the peace and quiet of any residential neighborhood or which are physically annoying to persons of ordinary sensitivity or which are so harsh, prolonged or unnatural or unusual in their use, time or place as to occasion physical discomfort to the inhabitants of the City, or any number thereof. The standards for dBA noise level in Section (Sound Amplification) shall apply to this Section. To the extent that the noise created causes the noise level at the property line to exceed the ambient noise level by more than 1.0 decibels, it shall be presumed that the noise being created also is in violation of this Section.

2.2.2.2 Canyon Lake General Plan Noise Element

The City's General Plan Noise Element identifies noise sources within the City and contains policies designed to protect existing and planned land uses identified in the Land Use Element from hazards and excessive noise. The following policies are included in the Canyon Lake General Plan Noise Element.

NEP-1 All land uses shall be provided the maximum protection from intrusive and hazardous noise.

NEP-2 Land use compatibility standards shall be used when siting potential noise generating uses.

NEP-3 The City Planning Department shall serve as the Noise Control Coordinator.

NEP-4 Noise complaints shall be monitored consistent with established standards.

NEP-5 Excessive noise beyond the established standards shall be considered a public nuisance.

2.2.3 City of Lake Elsinore Municipal Code

The City of Lake Elsinore boundary is located west and south of the CLWTP (Figure 2). Construction of the off-site water pipeline connection would occur within Via De La Valle in the City of Lake Elsinore. Applicable noise portions of the Lake Elsinore Municipal Code are provided below.

Exterior Noise Limits – Section 17.176.060

A. Maximum Permissible Sound Levels by Receiving Land Use.

1. The noise standards for the various categories of land use identified by the Noise Control Office(r) as presented in (Table 2, *Lake Elsinore Exterior Noise Limits*) shall, unless otherwise specifically indicated, apply to all such property within a designated zone.

2. No person shall operate, or cause to be operated, any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured on any other property, either incorporated or unincorporated, to exceed:

    a. The noise standard for that land use as specified in Table 2 for a cumulative period of more than 30 minutes in any hour; or

    b. The noise standard plus five dB for a cumulative period of more than 15 minutes in any hour; or

    c. The noise standard plus 10 dB for a cumulative period of more than five minutes in any hour; or

    d. The noise standard plus 15 dB for a cumulative period of more than one minute in any hour; or

    e. The noise standard plus 20 dB or the maximum measured ambient level, for any period of time.

3. If the measured ambient level differs from that permissible within any of the fast four noise limit categories above, the allowable noise exposure standard shall be adjusted in five dB increments in each category as appropriate to encompass or reflect said ambient noise level.

In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

4. If the measurement location is on a boundary between two different zones, the noise level limit applicable to the lower noise zone plus six dB shall apply.

5. If possible, the ambient noise shall be measured at the same location along the property line utilized in subsection (A)(2) of this section with the alleged offending noise source inoperative. If, for any reason, the alleged offending noise source cannot be shut down, the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance such that the noise from the source is at least 10 dB below the ambient in order that only the ambient level be measured. If the difference between the ambient and the noise source is five to 10 dB, then the level of the ambient itself can be reasonably determined by subtracting a one-decibel correction to account for the contribution of the source.

B. Correction for Character of Sound. In the event the alleged offensive noise, as judged by the Noise Control Officer, contains a steady, audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech conveying informational content, the standard limits set forth in Table 2 shall be reduced by five dB.

Table 2
LAKE ELSINORE EXTERIOR NOISE LIMITS

Receiving Land Use Category	Time Period	Noise Level (dBA)
Single-Family Residential	10 p.m. – 7 a.m.	40
	7 a.m. – 10 p.m.	50
Multiple Dwelling Residential	10 p.m. – 7 a.m.	45
	7 a.m. – 10 p.m.	50
Limited Commercial and Office	10 p.m. – 7 a.m.	55
	7 a.m. – 10 p.m.	60
General Commercial	10 p.m. – 7 a.m.	60
	7 a.m. – 10 p.m.	65
Light Industrial	Anytime	70
Heavy Industrial	Anytime	75

Source: Lake Elsinore Municipal Code Section 17.176.060
dBA = A-weighted decibel

Prohibited Acts, Construction/Demolition – Section 17.176.080.F

No person shall unnecessarily make, continue, or cause to be made or continued, any noise disturbance. The following acts, and the causing or permitting thereof, are declared to be in violation of this chapter:

F. Construction and Demolition

1. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays, such that the sound therefrom creates a noise disturbance

across a residential or commercial real property line, except for emergency work of public service utilities or by variance issued by the City.

2. Noise Restrictions at Affected Properties. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed those listed in the following schedule (Table 3, *Lake Elsinore Maximum Construction Noise Levels*):

Table 3
LAKE ELSINORE MAXIMUM CONSTRUCTION NOISE LEVELS

At Residential Properties	Type I Areas Single-Family Residential	Type II Areas Multifamily Residential	Type III Areas Semi-Residential/ Commercial
Mobile Equipment[1]			
Daily, except Sundays and Legal Holidays 7:00 a.m. to 7:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 7:00 p.m. to 7:00 a.m. and all-day Sunday and Legal Holidays	60 dBA	65 dBA	70 dBA
Stationary Equipment[2]			
Daily, except Sundays and Legal Holidays 7:00 a.m. to 7:00 p.m.	60 dBA	65 dBA	70 dBA
Daily, 7:00 p.m. to 7:00 a.m. and all-day Sunday and Legal Holidays	50 dBA	55 dBA	60 dBA
At Business Properties			
Mobile Equipment[1]			
Daily, including Sundays and Legal Holidays, all hours	85 dBA		
Stationary Equipment[2]			
Daily, including Sundays and Legal Holidays, all hours	75 dBA		

Source: Lake Elsinore Municipal Code Section 17.176.080.F

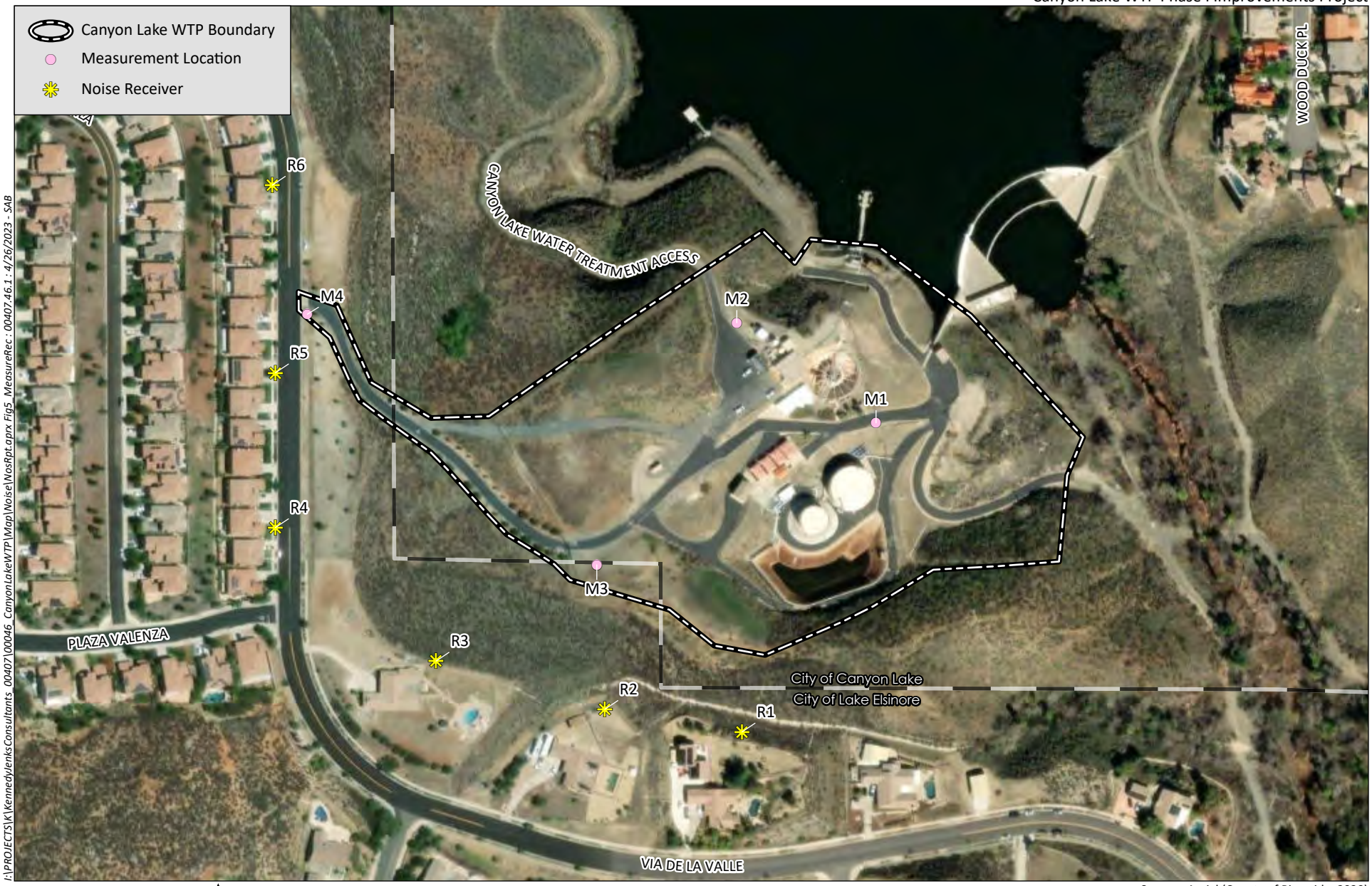
[1] Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment.

[2] Maximum noise levels for repetitively scheduled and relatively long-term operation (period of 10 days or more) of stationary equipment.

3. All mobile or stationary internal combustion engine powered equipment or machinery shall be equipped with suitable exhaust and air intake silencers in proper working order.

2.3 EXISTING NOISE ENVIRONMENT

Four short-term daytime ambient noise measurements were taken at the project site to document existing conditions. While the CLWTP has been in active operation in various conditions since 1956, in 2019 operations were halted to address per- and polyfluoroalkyl substance levels exceeding California's Notification and Response Levels. As a result, current noise levels at the CLWTP are likely lower than the typical conditions when the facility is fully operational. Noise sources included aircrafts, occasional vehicular traffic, and animal activities. During the site visit the temperature was 68 degrees Fahrenheit, the wind speed was approximately 3 miles per hour, and humidity was approximately 27 percent. The specific measurement locations are shown on Figure 5, *Measurement and Receiver Locations*, and the measured noise levels are shown in Table 4, *Noise Measurement Results.*



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Source: Aerial (County of Riverside, 2020)

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Measurement and Receiver Locations

Figure 5

Table 4
NOISE MEASUREMENT RESULTS

Measurement 1	
Date:	April 20, 2023
Time:	10:37 a.m. – 10:52 a.m.
Location:	Eastern portion of Project site, east of clarifier and clearwell.
Measured Noise Level:	47.9 dBA L_{EQ}
Measurement 2	
Date:	April 20, 2023
Time:	10:42 a.m. – 10:57 a.m.
Location:	Northern portion of Project site, north of the existing chemical feed area.
Measured Noise Level:	44.6 dBA L_{EQ}
Measurement 3	
Date:	April 20, 2023
Time:	11:02 a.m. – 11:17 a.m.
Location:	Southern portion of Project site, near access gate and approximately 350 feet north of residences.
Measured Noise Level:	50.1 dBA L_{EQ}
Measurement 4	
Date:	April 20, 2023
Time:	11:04 a.m. – 11:19 a.m.
Location:	West of the Project site at the driveway from Via De La Valle.
Measured Noise Level:	48.4 dBA L_{EQ}

dBA = A-weighted decibel; L_{EQ} = time-averaged noise level

2.4 NOISE AND VIBRATION SENSITIVE LAND USES

Noise-sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise, including residences, hospitals, schools, hotels, resorts, libraries, sensitive wildlife habitat, or similar facilities where quiet is an important attribute of the environment. Noise receptors are individual locations that may be affected by noise. NSLUs in the project vicinity include single-family-residences to the north, south, and west. A campground is also located north of the project site. See Figure 2.

Land uses in which ground-borne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations are considered "vibration-sensitive" (California Department of Transportation [Caltrans] 2020). The degree of sensitivity depends on the specific equipment that would be affected by the ground-borne vibration. In addition, excessive levels of ground-borne vibration of either a regular or an intermittent nature can result in annoyance to residential uses or schools. Land uses in the project area that are subject to annoyance from vibration include single-family residences.

3.0 METHODOLOGY AND ASSUMPTIONS

3.1 EQUIPMENT AND METHODOLOGY

The following equipment was used to measure existing noise levels at the project site:

- Piccolo II Sound Level Meters
- Larson Davis Model CA250 Calibrator
- Windscreen and tripod for the sound level meter

The sound-level meters were calibrated prior to the noise measurement to ensure accuracy. All measurements were made with meters that conform to the American National Standards Institute (ANSI) specifications for sound level meters (ANSI SI.4-1983 R2006). All instruments were maintained with National Institute of Standards and Technology traceable calibration per the manufacturers' standards.

Modeling of the exterior noise environment for this report was accomplished using Computer Aided Noise Abatement (CadnaA) version 2022. CadnaA is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions (DataKustik 2022). CadnaA assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project related information, such as noise source data, barriers, structures, and topography to create a detailed model, and uses the most up-to-date calculation standards to predict outdoor noise impacts. Computer Aided Design plans provided by the project applicant were input into the models. Input variables included elevation, area topography, and project features.

Construction equipment noise was analyzed using the Roadway Construction Noise Model (RCNM) developed by the U.S. Department of Transportation (USDOT), which utilizes estimates of sound levels from standard construction equipment (USDOT 2008).

3.2 ASSUMPTIONS

3.2.1 Construction

Construction equipment assumptions were provided by project engineers. Demolition of existing CLWTP components is anticipated to require the use of a backhoe, excavator, sheepsfoot roller, vibratory plate, jackhammer, roller/compactor, asphalt paver, and dump trucks. During grading, excavators, skid steers/motor graders, and rollers/compactors are anticipated to be required. Construction of the off-site water pipeline connection to the main pipeline within Via De La Valle is anticipated to require an excavator, loader, dump truck, roller, and paver. These phases of construction are anticipated to require the most heavy-duty construction equipment while later phases of building construction and equipment installation would utilize less intensive equipment generating lower noise levels. Grading of the project site is anticipated to result in a total of 19,000 cubic yards of soil export with approximately 48 one-way haul trips occurring each day (HELIX 2023). The daily traffic level associated with grading is anticipated to be the highest daily truck traffic level associated with project construction.

3.2.2 Typical Operation

During project operation, permanent stationary noise-generating equipment is anticipated to include pumps and fans. Other proposed permanent equipment such as mixers and chemical treatment systems would not generate substantial noise levels such that noise from these sources would be audible outside of the CLWTP. Specific noise data for the proposed equipment are not available at the current level of project design. General planning can be provided based on current project plans and measured noise levels generated by similar equipment used at other water treatment facilities.

It is assumed that the intake pump station would include four 200-horsepower (hp) horizontal pumps and two 3-hp cooling fans. Within the booster pump room, it is anticipated that three 200-hp vertical pumps, two 100-hp vertical pumps, and two 3-hp cooling fans would be installed. Typical pump stations include one extra pump to allow for maintenance. Therefore, it is anticipated that only three 200-hp pumps in the intake pump station and two 200-hp pumps plus one 100-hp pump in the booster pump room would be in operation at a given time.

While noise specifications for the proposed equipment are currently unavailable, general noise planning information can be provided based on typical equipment noise levels and the assumptions provided above. The noise planning information used for the equipment is shown in Table 5, *Operational Equipment Noise Levels*.

Table 5
OPERATIONAL EQUIPMENT NOISE LEVELS[1]

Equipment Type	Octave Band Center Frequency (Hertz)								Noise Sum (dBA)
	63	125	250	500	1,000	2,000	4,000	8,000	
Pump	82.9	85.5	92.1	90.6	90.1	86.3	75.5	67.5	93.8
Building Fan	78.0	85.0	81.0	79.0	77.0	74.0	67.0	61.0	81.9

[1] Given as Sound Power Level (SWL) unless otherwise noted.
dBA = A-weighted decibels

3.3 GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

The following thresholds are based on Appendix G of the CEQA Guidelines and noise regulations of local jurisdictions. Implementation of the project would result in a significant impact related to noise if it would:

Threshold 1: *Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.*

Given the absence of a construction-specific noise standard for the City, the project would result in a significant construction noise impact if on-site construction would exceed the City's exterior noise standard of 80 dBA L_{MAX} at nearby residential land uses. For off-site construction occurring in the City of Lake Elsinore, a significant impact would occur if construction noise would conflict with the Lake Elsinore Municipal Code limits provided in Table 3.

As no property line noise limits for the City have been established, property line limits established by the neighboring City of Lake Elsinore are considered in this analysis. Impacts related to operational noise would be considered significant if project-related operational noise sources generated noise levels at nearby residential property lines exceeding the City of Lake Elsinore limits for single-family residences of 40 dBA L_{EQ} during nighttime hours.

Threshold 2: *Generate excessive groundborne vibration or groundborne noise levels.*

Impacts related to vibration would be significant if the project would result in the exposure of persons to groundborne vibration equal to or in excess of Caltrans' severe human response threshold of 0.4 in/sec PPV from a continuous/frequent intermittent source (e.g., vibratory rollers) or 2.0 in/sec PPV from transient sources (e.g., blasting; Caltrans 2020). In addition, a significant adverse impact would occur if nearby buildings would be exposed to vibration levels exceeding the vibration damage potential criteria for the applicable structure type provided by Caltrans.

Threshold 3: *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.*

Aircraft noise would be considered a significant impact if it would expose people working at the project site to incompatible noise levels, as provided in an airport land use compatibility plan or other local plan.

4.0 IMPACT ANALYSIS

4.1 ISSUE 1: INCREASE IN AMBIENT NOISE

Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

4.1.1 Impact Analysis

4.1.1.1 Temporary Increases in Ambient Noise

Significant impacts related to noise increases during construction would occur if construction within the CLWTP would exceed the City 's exterior noise standard of 80 dBA L_{MAX}. In addition, a significant impact could occur if construction in the City of Lake Elsinore would result in noise levels exceeding the standards provided in Table 3. If occupied habitat is identified prior to construction activities proposed during the breeding season of sensitive bird species, additional noise reduction may be required to comply with biological resource protection requirements.

The nearest residences to the construction area for the project are those located in the right-of-way of Via de la Valle, approximately 50 feet west of the proposed off-site water pipeline connection. The majority of project construction would take place within and surrounding the existing CLWTP components, which are located approximately 290 feet from the nearest residences to the south and west. Table 6, *Construction Equipment Noise Levels*, provides the maximum and hourly noise levels generated by proposed construction equipment at 50 and 290 feet according to RCNM.

Table 6
CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment	Hourly Percent Use	dBA L_{MAX} at 50 feet	dBA L_{EQ} at 50 feet	dBA L_{MAX} at 290 feet	dBA L_{EQ} at 290 feet
Backhoe	40	-	-	62.3	58.3
Compactor	20	-	-	68.0	61.0
Dump Truck	40	76.5	72.5	61.2	57.2
Excavator	40	80.7	76.7	65.4	61.5
Front End Loader	40	79.1	75.1	63.8	59.9
Grader	40	-	-	69.7	65.8
Jackhammer	20	-	-	73.6	66.6
Paver	50	77.2	74.2	62.0	58.9
Roller	20	80.0	73.0	64.7	57.7

Source: USDOT 2008
dBA = A-weighted decibel; L_{MAX} = maximum noise level; L_{EQ} = hourly noise level

As shown in Table 6, according to RCNM, the loudest piece of proposed construction equipment for on-site construction would be a jackhammer, which would generate a maximum noise level of 73.6 dBA L_{MAX} at 290 feet. Therefore, at the nearest residential property, the City's exterior noise standard of 80 dBA L_{MAX} would not be exceeded during construction within the proposed treatment plant areas. Further, this noise level does not account for intervening topography that may attenuate noise levels. Impacts related to construction noise would be less than significant during on-site construction.

Construction of the off-site water pipeline would require the use of construction equipment within the Via De La Valle right-of-way, approximately 50 feet east of residential receptors. Construction of this pipeline connection is anticipated to be located in close proximity to residences for fewer than 10 days and require the use of an excavator, loader, dump truck, roller, and paver. As the construction activity would occur for fewer than 10 days at a single-family residence, the applicable construction noise threshold would be 75 dBA L_{MAX}. As shown in Table 6, at 50 feet from the residences, the maximum noise level would be generated by an excavator and would be 80.7 dBA L_{MAX}. At 100 feet, an excavator generates a maximum noise level of 74.7 dBA L_{MAX} (USDOT 2008). Therefore, construction of the water pipeline would not comply with the Lake Elsinore Municipal Code and noise impacts associated with construction within 100 feet of residences would be considered potentially significant.

Off-site haul trips would also result in increased noise levels along roadways during project construction. According to the project engineer, grading of the project site would result in 19,000 cubic yards of soil export and approximately 48 one-way haul trips occurring each day. Over the course of an eight-hour work day, approximately six haul truck passes would be anticipated to occur on Via De La Valle in a given hour. Haul trucks would be routed through the existing CLWTP driveway, exiting onto Via De La Valle and traveling through the residential neighborhood. While the addition of the proposed haul trips to a roadway with otherwise low traffic volumes may result in an increase in ambient noise levels, the addition of six hourly passes would occur temporarily during the ten-week grading period. Based on the relatively small number of hourly trips and the temporary nature of grading operations, impacts related to haul truck traffic noise during construction would be less than significant.

4.1.1.2 Permanent Increases in Ambient Noise

As the project would be in constant operation, significant impacts related to the permanent noise increases from the facility improvements would occur if the project would generate nighttime noise levels exceeding the nighttime single-family residential property line noise limit of 40 dBA L_{EQ} at the residences located adjacent to the project in the City of Lake Elsinore[1].

Stationary equipment proposed by the project is anticipated to include the pumps and fans provided in Section 3.2.2. These sources were modeled in CadnaA and noise receivers were placed at the surrounding residential properties at a height of two meters (6.6 feet), as shown in Figure 5. The resulting noise levels at 50 feet and the noted receivers with sources from the intake pump station, booster pump station, and the two sources combined are presented in Table 7, *Stationary Equipment Noise Levels without Noise Control*.

Table 7
STATIONARY EQUIPMENT NOISE LEVELS WITHOUT NOISE CONTROL

Receiver	Intake Pump Station (dBA L_{EQ})	Booster Pump Room (dBA L_{EQ})	Combined Sources (dBA L_{EQ})	Exceeds City of Lake Elsinore Noise Limit?
At 50 feet	63.4	60.4	-	
R1	19.2	45.7	**45.7**	**Yes**
R2	19.2	44.0	**44.0**	**Yes**
R3	18.8	41.3	**41.3**	**Yes**
R4	16.5	31.8	32.0	No
R5	24.1	25.6	27.9	No
R6	27.6	26.1	29.9	No

Source: CadnaA
dBA = A-weighted decibel; L_{EQ} = hourly noise level.
Bold font indicates noise level exceeds City of Lake Elsinore nighttime noise limit of 40 dBA L_{EQ}.

As shown in Table 7, noise levels at residences located south of the CLWTP would exceed the nighttime noise level limit of 40 dBA L_{EQ} at receiver locations R1, R2, and R3 near the residences along Via de la Valle and, therefore, the project may substantially increase ambient noise levels in the vicinity of the project. Impacts related to permanent stationary noise sources would be potentially significant.

Vehicle trips to the project site would occur daily during operation for the purposes of maintenance and testing. Existing operation of the CLWTP requires two employees to be on-site and with the addition of the treatment systems proposed by the project, up to six full-time employees may need to access the CLWTP on a given day. Chemical deliveries would be required once every two to four weeks. Between employee access and delivery trips, it is anticipated that up to 12 one-way trips to the project site could occur on a given day. Up to 12 one-way trips added to local roadways would not result in substantial increases in traffic noise during project operation and impacts would be less than significant.

[1] The CLWTP is within the City of Canyon Lake; however, the Canyon Lake Municipal Code does not specifically address property line limits related to noise levels. The proposed project would potentially generate noise that would affect the residents within the City of Lake Elsinore; therefore, Lake Elsinore's limits were used in the analysis.

4.1.2 Mitigation Measures

The following mitigation measures would be required during construction and prior to project operation.

MM NOI-1 **Off-Site Construction Noise Control.** For daytime construction of the off-site water pipeline occurring for less than 10 days in a location, construction noise shall not exceed a maximum noise level of 75 dBA L_{MAX}. It is anticipated that when construction activity occurs within 100 feet of residences west of Via De La Valle, noise control shall be provided such that construction noise complies with City of Lake Elsinore standards. A noise barrier shall be placed between noise-generating equipment and residential land uses.

A temporary barrier may be used and shall be solid and constructed of masonry, wood, plastic, fiberglass, steel, or a combination of those materials, with no cracks or gaps through or below the wall. Any seams or cracks must be filled or caulked. If wood is used, it can be tongue and groove or close butted seams and must have a Sound Transmission Class (STC) rating of 23. Sheet metal may be used, if it meets the other criteria and is properly supported and stiffened so that it does not rattle or create noise itself from vibration or wind. Noise blankets, hoods, or covers also may be used, provided they are appropriately implemented to provide the required sound attenuation. The noise control barrier enclosures may be created as an elongated "U" shape, with the elongated sides parallel to the pipeline and the opening facing away from residential receptors.

MM NOI-2 **Stationary Equipment Noise Control.** Noise control features shall be implemented surrounding operational components of the flocculation basin and booster pump station such that hourly noise levels do not exceed 40 dBA L_{EQ} at residential property lines surrounding the project site. Based on current planning information, the recommendations below are anticipated to facilitate the required reductions in noise levels. Other methods of noise control may be implemented provided they result in hourly noise levels of less than 40 dBA L_{EQ} at residential property lines. The selected noise control components shall be shown on the final construction documents.

The recommended noise control features include the installation of six-inch or thicker acoustic louvers provided on all building ventilation openings or other openings of the booster pump room (not including those typically closed such as doors). The six-inch louvers should provide, at minimum, the noise reduction provided in Table 8, *Six-Inch Louver Noise Reduction*.

Table 8
SIX-INCH LOUVER NOISE REDUCTION

63 Hz	125 Hz	250 Hz	500 Hz	1,000 Hz	2,000 Hz	4,000 Hz	8,000 Hz
6 dB	6 dB	8 dB	10 dB	15 dB	19 dB	19 dB	19 dB

Hz = Hertz; dB = decibel

4.1.3 Significance After Mitigation

Implementation of MM NOI-1 would reduce potentially significant impacts resulting from project construction to a less than significant level.

To ensure the feasibility of reducing noise levels from the project below 40 dBA L_{EQ}, the suggested noise control design provided in MM NOI-2 was added to the CadnaA model and the resulting noise levels are provided in Table 9, *Stationary Equipment Noise Levels with Noise Control*. No noise control was required for the intake pump station; therefore, revised noise levels are not provided for this source. As shown in Table 9, the noise control methods included in MM NOI-2 would reduce noise levels below 40 dBA L_{EQ}. Alternative noise control methods may be implemented provided they reduce noise levels from the equipment to the listed 50-foot levels when measured at 50 feet from the source. With implementation of MM NOI-2, stationary noise sources would not result in noise levels exceeding 40 dBA L_{EQ} and impacts would be less than significant.

Table 9
STATIONARY EQUIPMENT NOISE LEVELS WITH NOISE CONTROL

Receiver	Intake Pump Station (dBA L_{EQ})	Booster Pump Room with Noise Control (dBA L_{EQ})	Combined Sources (dBA L_{EQ})	Exceeds City of Lake Elsinore Noise Limit?
At 50 feet	63.4	42.2	-	
R1	19.2	27.9	28.4	No
R2	19.2	26.2	27.0	No
R3	18.8	23.6	24.8	No
R4	16.5	14.1	18.5	No
R5	24.1	9.8	24.2	No
R6	27.6	9.8	27.7	No

Source: CadnaA
dBA = A-weighted decibel; L_{EQ} = hourly noise level

4.2 ISSUE 2: VIBRATION

Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?

4.2.1 Temporary Increases in Groundborne Vibration

The nearest vibration-sensitive land uses to the project site are residences located west of the project site and are considered new residential structures. As described in Section 4.1.1 above, construction of the off-site water pipeline connection would occur approximately 50 feet from the residences west of the project site, though the majority of project construction would occur more than 300 feet from nearby residences. Significant vibration impacts to structures would occur if vibration levels at these new residential structures exceed 0.5 in/sec PPV with the use of continuous/frequent intermittent sources, which include most construction equipment. A significant impact to human receptors would occur if vibration levels would exceed the severe human response threshold of 0.4 in/sec PPV from a continuous/frequent intermittent source (Caltrans 2020).

Ground-borne vibration levels resulting from construction activities within the project area were estimated using data provided by Caltrans and compared to applicable Caltrans thresholds. Vibration from construction equipment can be estimated using the equation $PPV_{Equipment} = PPV_{Ref}$ (25/D)n where PPVREF is the PPV generated at 25 feet, D is the distance from the equipment to the receiver in feet, and n is 1.1 (Caltrans 2020). A vibratory roller is anticipated to be the piece of construction equipment with the highest vibration potential required for project construction and has a reference PPV of 0.210 in/sec at 25 feet. At 50 feet, the distance from the nearest residences, the use of a vibratory roller is estimated to generate vibration levels of 0.098 in/sec PPV. This is far below both the severe human response threshold of 0.4 in/sec PPV and the structural damage threshold of 0.5 in/sec PPV. Therefore, the project would not result in excessive temporary groundborne vibration or noise levels and impacts would be less than significant.

4.2.2 Permanent Increases in Groundborne Vibration

The project does not propose equipment that is anticipated to generate substantial groundborne vibration. Given the distance between operational equipment and nearby residential land uses, perceptible vibration levels are not anticipated to occur at residences surrounding the project site. Therefore, no impact related to vibration during project operation would occur.

4.3 ISSUE 3: AIRCRAFT NOISE

For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the project area to excessive noise levels?

The project site is not within the planning area for an adopted airport land use compatibility plan or within two miles of an airport without such a plan. The nearest airport to the project site is the Perris Valley Airport, located approximately 6.5 miles northeast of the site. The noise contours for the Perris Valley Airport do not include the project site (Riverside County Airport Land Use Commission 2011). Thus, people working at the project site would not be exposed to excessive aircraft noise and no impact would occur.

5.0 LIST OF PREPARERS

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