Rice Road Pipeline at Salt Creek Project

Draft Initial Study and Mitigated Negative Declaration

Lead Agency:

Eastern Municipal Water District

2270 Trumble Road

Perris, CA 92570

October 2025

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Prepared for:

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October 2025

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Acronyms

Acronym	Definition
AQMP	Air Quality Management Plan
CAAQS	California Ambient Air Quality Standards
Cal Fire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CCR	California Code of Regulations
CDOC	California Department of Conservation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EMWD	Eastern Municipal Water District
EOP	Emergency Operations Plan
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone

Acronym	Definition
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gas
GIS	Geographic Information System
GSP	Groundwater Sustainability Plan
GWP	global warming potential
HDD	horizontal directional drilling
HDPE	high density polyethylene
IS/MND	Initial Study/Mitigated Negative Declaration
LHMP	Local Hazard Mitigation Plan
L_{max}	Maximum Sound Level
LST	localized significance threshold
MMRP	Mitigation Monitoring and Reporting Program
MRZ	Mineral Resource Zone
MSHCP	Multiple Species Habitat Conservation Plan
MTBM	microtunneling boring machine
MWD	Metropolitan Water District of Southern California
NAAQS	National Ambient Air Quality Standards
ND	Negative Declaration
NEPA	National Environmental Policy Act
NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O&M	operations and maintenance
OPR	California Governor's Office of Planning and Research
PM_{10}	particulate matter less than 10 microns in aerodynamic diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in aerodynamic diameter
PPV	Peak Particle Velocity
PQP	public quasi-public
PVC	polyvinyl chloride
RCA	Regional Conservation Authority
RCFC&WCD	Riverside County Flood Control and Water Conservation District
RCTD	Riverside County Transportation Department
SCAB	South Coast Air Basin

Acronym	Definition
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SGMA	Sustainable Groundwater Management Act
SoCal Gas	Southern California Gas Company
SRA	source receptor areas
SVP	Society of Vertebrate Paleontology
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
UWMP	Urban Water Management Plan
VMT	vehicle miles traveled
VOCs	volatile organic compounds

1. INTRODUCTION

1.1 Purpose of this Document

Eastern Municipal Water District (EMWD) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) to evaluate the potential environmental impacts related to implementation of the Rice Road Pipeline at Salt Creek Project (the "Project"), which consists of extending an existing potable water pipeline and converting an existing potable water pipeline to a recycled water pipeline under Salt Creek, along Rice Road between Olive Avenue and Domenigoni Parkway in Riverside County.

EMWD is the lead agency under the California Environmental Quality Act (CEQA) for the proposed Project. CEQA requires that the lead agency prepare an initial study (IS) to determine whether an Environmental Impact Report (EIR), Negative Declaration (ND), or Mitigated Negative Declaration (MND) is needed. EMWD has prepared this IS to evaluate the potential environmental consequences associated with the proposed Project and to disclose to the public and decision makers the potential environmental effects of the proposed Project. Based on the analysis presented herein, an MND is the appropriate level of environmental documentation for the proposed Project.

1.2 Scope of this Document

This IS/MND has been prepared in accordance with CEQA (as amended) (Public Resources Code Section 21000 et. seq.) and the State CEQA Guidelines (California Code of Regulations (CCR), Title 14, Natural Resources Division 6, Resources Agency Chapter 3, Section 15000 et. seq.), as amended December 28, 2018. CEQA Guidelines Section 15063 describes the requirements for an IS and Sections 15070–15075 describe the process for the preparation of an MND. Where appropriate, this document refers to either the CEQA Statute or State CEQA Guidelines. This IS/MND contains all of the contents required by CEQA, which includes a project description, a description of the environmental setting, potential environmental impacts, mitigation measures for any significant effects, consistency with plans and policies, and names of preparers.

This IS/MND evaluates the potential for environmental impacts to resource areas identified in Appendix G of the State CEQA Guidelines (as amended in December 2018). The environmental resource areas analyzed in this document include:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation

- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Mandatory Findings of Significance

1.3 Impact Terminology

The level of significance for each resource area uses CEQA terminology as specified below:

No Impact. No adverse environmental consequences have been identified for the resource or the consequences are negligible or undetectable.

Less than Significant Impact. Potential adverse environmental consequences have been identified. However, they are not adverse enough to meet the significance threshold criteria for that resource. No mitigation measures are required.

Less than Significant Impact with Mitigation Incorporated. Adverse environmental consequences that have the potential to be significant but can be reduced to less than significant levels through the application of identified mitigation strategies that have not already been incorporated into the proposed Project.

Potentially Significant. Adverse environmental consequences that have the potential to be significant according to the threshold criteria identified for the resource, even after mitigation strategies are applied and/or an adverse effect that could be significant and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared to meet the requirements of CEQA.

1.4 CEQA Process

In accordance with CEQA Guidelines Section 15073, the IS/MND will be circulated for a 30-day public review period (October 31 – December 1, 2025) to local and state agencies, and to interested organizations and individuals who may wish to review and comment on the report. EMWD will circulate the IS/MND to the State Clearinghouse for distribution to State agencies. In addition, EMWD will circulate a Notice of Intent to Adopt a Mitigated Negative Declaration to the Riverside County Clerk, responsible agencies, and interested entities. A copy of the IS/MND is available for review at https://www.emwd.org/public-notices.

Written comments can be submitted to EMWD by 5:00 pm on December 1, 2025 and addressed to:

Joseph Broadhead, Principal Water Resources Specialist – CEQA/NEPA
Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, CA 92572-8300
broadhej@emwd.org

Following the 30-day public review period, EMWD will evaluate all comments received on the IS/MND and incorporate any substantial evidence that the proposed Project could have an impact on the environment into the Final IS/MND and prepare a Mitigation Monitoring and Reporting Program (MMRP).

The IS/MND and MMRP will be considered for adoption by the EMWD Board of Directors in compliance with CEQA at a future publicly noticed hearing, which are held on the 1st and 3rd Wednesday of each month at EMWD's headquarters.

2. PROJECT DESCRIPTION

2.1 Project Overview

The Rice Road Pipeline at Salt Creek Project involves construction and operation of approximately 800 linear feet of new 24-inch diameter potable water pipeline under Salt Creek along the Rice Road alignment, followed by conversion of approximately 700 linear feet of existing 12-inch and 18-inch potable water pipeline to a recycled water line parallel to the new potable water pipeline under Salt Creek along the Rice Road alignment, new pipeline connections, and demolition and removal of approximately 20 feet of 8-inch pipeline and above-ground assemblies at the intersection of Olive Avenue and Beeler Road (see **Figure 2-2**). Refer to *Sections 2.4 and 2.5* for a detailed description of the Project components.

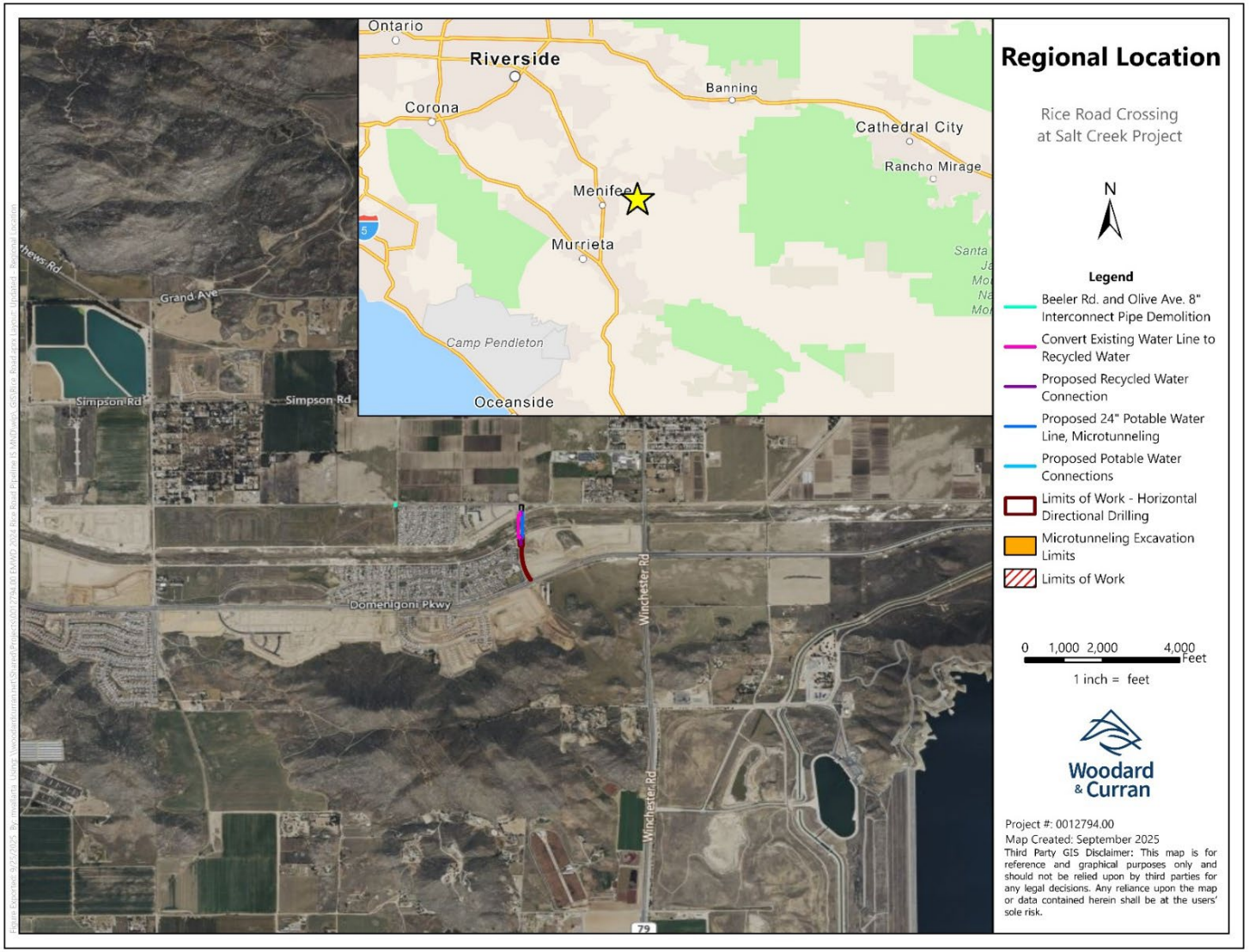
2.2 Project Purpose

The Project purpose is to improve EMWD's water conveyance system in the Project area. The proposed Project would provide reliability and redundancy to deliver potable water and recycled water to planned growth to minimize service interruptions, as well as promote public safety through the delivery of sufficient pressure and availability of water to support fire suppression services.

2.3 Project Location

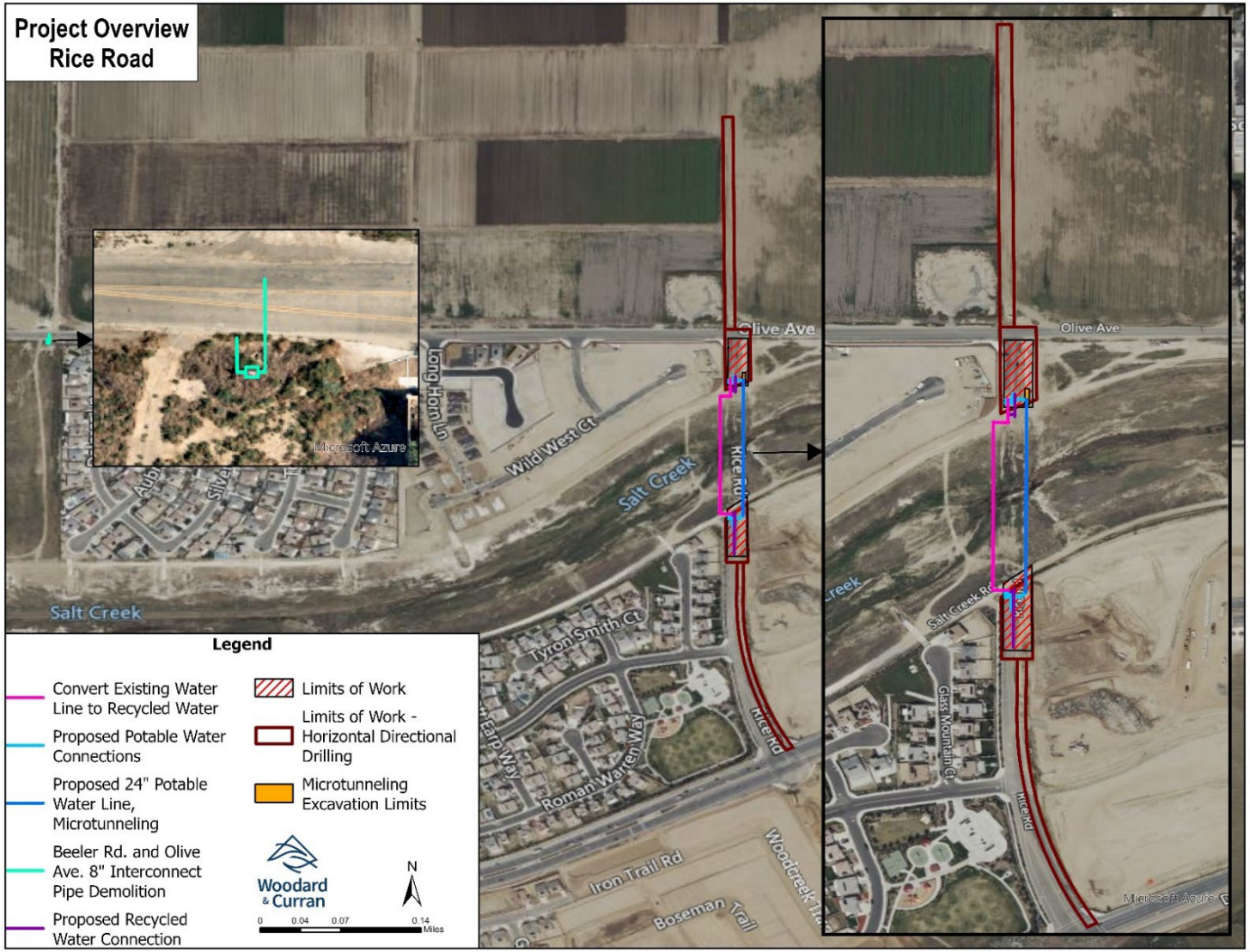
The proposed Project is located in the unincorporated community of Winchester, Riverside County (see **Figure 2-1**). As shown in **Figure 2-2**, the proposed potable water pipeline extension and recycled water pipeline would span beneath Salt Creek, just north of Domenigoni Parkway along Rice Road to Olive Avenue while the demolition and removal of pipeline and above-ground assemblies would occur at the intersection of Olive Avenue and Beeler Road.

Figure 2-1: Regional Location



Basemap source: Microsoft Azure, February 2022

Figure 2-2: Project Overview



Basemap source: Microsoft Azure, February 2022.

2.4 Project Construction

The Project involves constructing 800 linear feet of new potable water pipeline, followed by conversion of approximately 700 linear feet of an existing potable water pipeline to a recycled water pipeline. It would also involve new pipeline connections to existing potable water and recycled water pipelines, and demolition and removal of approximately 20 feet of 8-inch pipeline and above-ground assemblies at the intersection of Olive Avenue and Beeler Road. Construction details are provided in the following sections.

2.4.1 Pipeline Construction

The new 24-inch potable water pipeline would be constructed using trenchless methods under Salt Creek. This ensures that no construction activity would occur in the streambed of Salt Creek. All work would be undertaken outside the limits of jurisdictional waters of the State or U.S. There are two trenchless methods that could be utilized to complete the crossing. Option one is Horizontal Directional Drilling (HDD) and would entail drilling in the pipeline from one side of the creek to the other using a drill rig on the ground surface. Option two is to use microtunneling from a launch shaft located on the north side of Salt Creek, to a reception shaft located on the south side of Salt Creek. Outside of jurisdictional limits, the new potable water pipeline and converted recycled water pipeline would connect to an existing 18-inch potable water and existing 18-inch recycled water distribution systems using open cut construction methods. The new recycled water lines would be 18 inches in diameter. Pavement restoration is designed to match the existing 4-inch asphalt over 4-inches of Class II aggregate base and would adhere to Riverside County's paving standards.

Trenchless Excavation

Option 1: Horizontal Directional Drilling

Option one would utilize Horizontal Directional Drilling (HDD) to install the potable water pipeline underneath Salt Creek. HDD is a surface launched trenchless method used to install pipelines ranging in diameter from as small as a few inches up to 60 inches in diameter, although installations typically are 48 inches or less. HDD lengths can be several thousand feet long with single installation lengths achieved of well over 5,000 feet. HDD is capable of operating in a variety of soil and rock ground conditions and can operate below the groundwater table. HDD is a feasible installation method to install the potable water pipeline below Salt Creek.

The HDD installation process requires several installation phases. HDD is performed from the ground surface by installing the pipeline in an arch from an entry point to an exit point. The drill profile has straight sections near the entry and exit points, and the alignment is curved at depth to reach the desired depth. A straight section may connect the curved sections. Horizontal bends in plan can also be incorporated as needed. Pipe types that can be installed using HDD typically include high density polyethylene (HDPE), polyvinyl chloride (PVC), and steel. Staging would be located on the north and south sides of Salt Creek within the limits of work shown in **Figure 2-2**.

A brief sequence of operations for a typical HDD is as follows:

1. Drilling equipment mobilized to site. Typical equipment includes a drilling rig and mud separation plant for separating drilling mud from solids removed during the drilling process. The solids separation plant would be approximately 20 feet by 20 feet. Additional ancillary equipment is also required. Ideally, the entire product pipe is welded or fused at ground surface within the limits of the pipe laydown area prior to drilling.
2. Excavate shallow pits to contain drilling mud at both the entry and exit points.
3. Begin drilling pilot bore from entry to exit. This is completed with a small diameter steel drill rod and drill bit to define the drill path. During drilling processes, drilling mud is circulated from the tip of the drill stem to circulate cuttings back to the entry pit and to hold the borehole open. Drilling mud typically consists of clay bentonite mixed with water and is non-toxic.
4. Once the pilot bore is complete, a reamer is attached at the exit side to the pilot bore drill rod to increase the hole diameter. Multiple reamer sizes may be required.
5. Once the final borehole diameter is achieved, the product pipe is attached to the drill rod and pulled into the hole. Ideally, the entire product pipe is welded or fused at ground surface prior to pull back such that pull back can occur continuously which mitigates risk of hole collapse.

During pilot bore drilling, reaming, and pipe pull back (steps 3, 4, and 5), drilling mud is injected through the drill pipe and is circulated back to the entry and exit pits along with soil cuttings. The mud separation plant removes solids and recirculates drilling mud back into the drilling process.

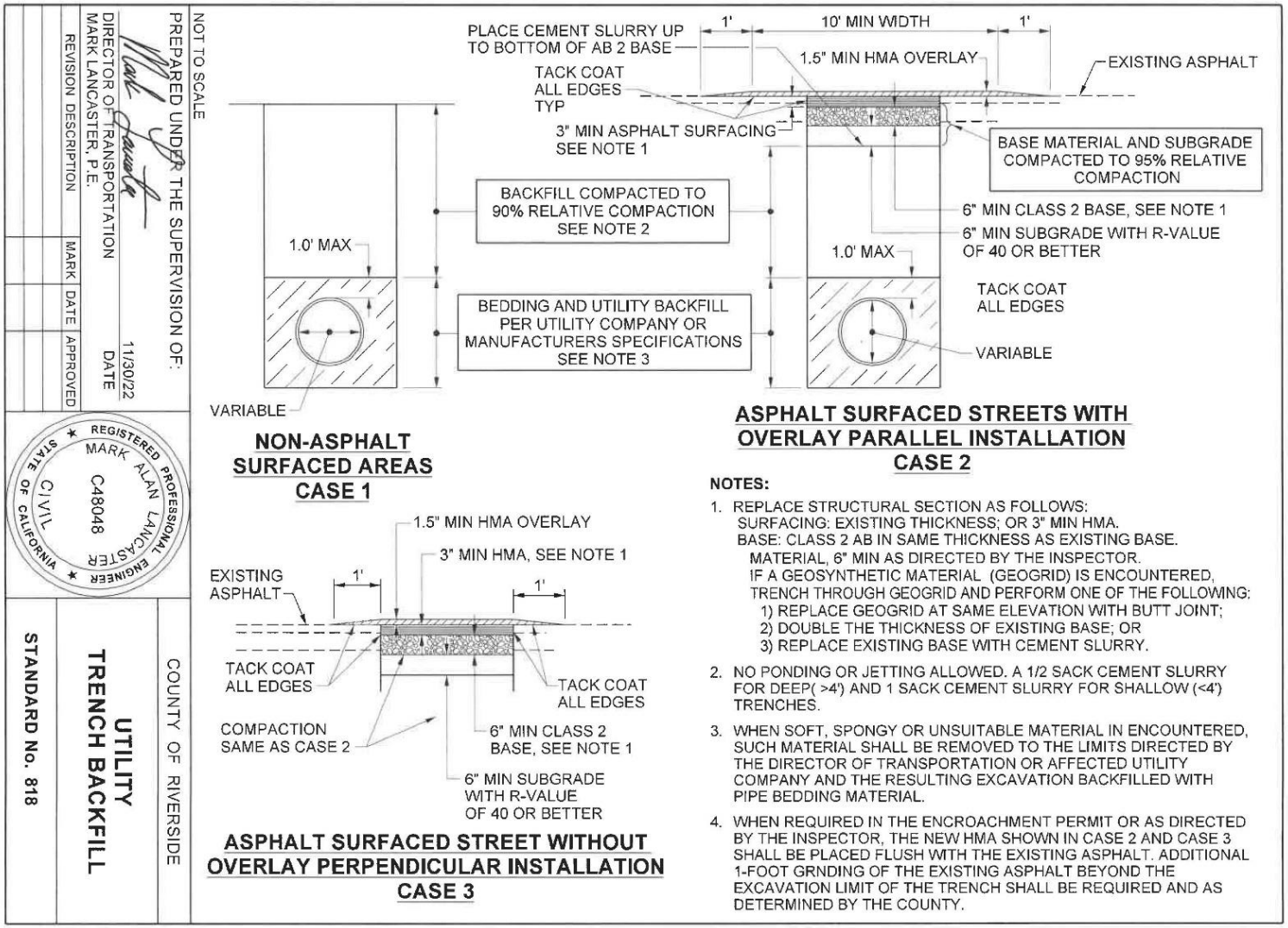
Option 2: Microtunneling

Option two would utilize microtunneling to install the potable water pipeline underneath Salt Creek including installing an approximate 610-foot long 48-inch steel casing with a 24-inch carrier pipe. Microtunneling is a trenchless construction method that involves a remotely controlled, guided microtunneling boring machine (MTBM) with a cutter wheel that excavates material at the face as the machine is jacked, or pushed, forward. The excavation depth, precision guiding, and low face pressure provides continuous positive control of earth and groundwater pressures to support the face of the excavation, which reduces the risk of over-excavation, settlement, or damage to creek infrastructure. As the MTBM advances forward, the casing pipe is jacked from the jacking shaft (approximately 18-foot by 35-foot) on the north side of the creek to the reception shaft (approximately 12-foot by 20-foot) on the south side of the creek. The excavated material is mixed with clean slurry and pumped to the surface for separation and removal utilizing a processing plant. Staging would be located adjacent to the MTBM launch location on the north side of the creek inside the limits of work area shown in **Figure 2-2**.

Groundwater is anticipated to be encountered under the microtunneling option, and thus, microtunneling shafts need to be watertight. This is accomplished via use of interlocking sheet piles. Sheet piles can be installed in a variety of ways including pressing, vibratory driving, and impact. These methods require a crane to hoist the sheet piles into position. Pressing installation utilizes a hydraulic press or other equipment (e.g., backhoe), depending on soil conditions, to provide the force to drive the sheet pile into the ground. Vibratory sheet pile driving uses vibratory hammers to decrease the resistance between the sheet pile and the surrounding soil and allows the sheet pile to be lowered into position. An impact hammer is typically used in hard or dense soil conditions, which are not anticipated for the Project. The precise method of shaft excavation, sheeting, shoring, and waterproofing would be determined during construction.

After construction is complete, all pipeline construction areas would be restored to pre-construction conditions. Replacement of pavement would follow Riverside County standards (see **Figure 2-3**).

Figure 2-3: Riverside County Standards for Pavement Resurfacing



Open-Cut Trenching

Open cut construction includes trench excavation, placement of new pipe bedding, installation of new pipeline, backfill and compaction, and surface restoration. This method would be used to construct the remaining portions of the new 24-inch water pipeline between the trenchless portion and points of connection to existing water pipelines, and the connections between the converted 12-inch recycled water pipeline and the existing 18-inch recycled water pipeline. Open cut trenches could be as deep as 20 feet and as wide as six feet. During construction, excavated material would be stored within the limits of work shown on **Figure 2-2**. After construction is complete, all open trench areas would be restored to pre-construction conditions.

Dewatering

Dewatering would not be required for Trenchless Option 1: HDD; however, it could be needed for Trenchless Option 2: Microtunneling on the north side of the creek. The existing groundwater depth on the south side of the creek is expected to be deep enough to not require dewatering. Under Option 2: Microtunneling, groundwater on the north side of the creek would be lowered to a depth of no less than five feet below excavation level for the launch shaft. Various techniques could be used to sink the shaft including active dewatering simultaneous with shaft excavation. Under this technique, if dewatering would cease when the shaft is shored and made watertight. Another option is to install a perimeter of watertight shoring, such as sheet piling, to full depth prior to excavation. Once watertight shoring is installed, a shaft base plug would be installed inside the bottom of the shaft using either jet grouting from the surface or by placing concrete using tremie methods. Once installed, the shaft interior is considered watertight and the ground inside of the shaft would be excavated.

Under the dewatering during excavation method, a series of small diameter wells would be drilled around the excavation site to pump groundwater out of the shaft during excavation and microtunneling. This dewatering system consists of 4-6 wells drilled to an approximate depth of 40 feet. The actual number of wells depends on soil permeability and dewatering flow rates encountered during construction. Each well borehole would be 24 inches in diameter. A 12-inch well with 20-feet of polyvinyl chloride (PVC) screened pipe and up to 20-feet of PVC encased pipe would be placed in the center of the borehole. The screened zone of each well would be filled with filtering material, while the remainder of the borehole would be backfilled with clean sand up to the ground surface. Each well would be furnished with an electric well pump capable of maintaining the estimated flow rates. Standby equipment and standby power supply would be provided. The ring of point wells would encircle the microtunneling shaft, within the limits of work.

Possible discharge options for groundwater pumped from the ground include:

- Discharge back into Salt Creek
- Pre-treat the water and discharge to a nearby 36-inch sanitary sewer in Olive Avenue
- Land spreading to allow it to percolate back into the ground

Baker tanks may be required to settle silt out prior to discharge, depending on the discharge option used. If the selected discharge option is to the sanitary sewer, additional treatment for dissolved solids and sulfates may be required. Treatment equipment would be located within the limits of work north of Salt Creek. Treatment and monitoring of groundwater would be conducted in accordance with applicable National Pollutant Discharge Elimination System (NPDES) discharge permits. The dewatering system would be removed upon completion of microtunneling construction.

Interconnect Pipe Demolition

The Project includes demolition and removal of approximately 20 feet of 8-inch interconnect pipeline and above-ground assemblies at the intersection of Olive Avenue and Beeler Road. Demolition and removal would involve the use of an excavator, pavement breaker, concrete saw, and dump hauling truck. The area of excavation would be approximately 70 feet long, eight feet deep, and three feet wide. During construction, excavated material would be stored within the roadway right-of-way. Once the interconnection pipe has been demolished, concrete plugs would be installed at the ends of the remaining pipe and filled with grout. After construction is complete, pavement would be replaced following Riverside County standards and all temporary work areas would be restored to pre-construction conditions. The existing interconnect pipe is situated within the shoulder and within the eastbound lane of Olive Avenue; traffic controls and a lane closure may be required during construction. Removal of the interconnection would last approximately one week and would occur after the converted recycled water pipeline becomes operational.

Equipment and Vehicles

Construction of the pipelines would require the estimated construction equipment in **Table 2-1**.

Table 2-1: Construction Vehicle Fleet

Equipment	Number Required
Backhoe/loader	2
Hydraulic excavator	2
Pile driving machine, hammer or vibration pile driving	2
Crane	2
Concrete mixer	1
Utility truck	1
Microtunneling machine (Option 2)	1
HDD drill rig (Option 1)	1
Water truck	2
Welder	1
Compressor	1
Pump	4
Pick-up trucks	2
Dump trucks	3

Equipment	Number Required
Concrete saw	3
Pavement breaker	2
Sweeper	1
Paver	3
Generators	2
Drill rig for dewatering wells (Option 2)	1
Generators for dewatering wells electric pumps (Option 2)	6

For Option 1: HDD, it is estimated that 605 cubic yards (CY) of spoil would be generated by the Project. Of this, a total of approximately 260 CY of spoil would be generated by HDD, 30 CY for small pits on either side of the crossing, and approximately 250 CY of spoil from the open trench segments and approximately 65 CY of spoil from the interconnect pipe demolition. Excavated material may be reused onsite as backfill; however, this would not be determined until excavation starts. If material cannot be reused for backfill, then it would be exported from the site. For the purposes of this analysis, it is assumed that 50% of the material would be hauled offsite for disposal. After construction is complete, all pipeline construction areas would be restored to pre-construction conditions.

For Option 2: Microtunneling, it is estimated that 1,850 cubic yards (CY) of spoil would be generated by the Project. Of this, a total of approximately 350 CY of spoil would be generated from microtunnelling, approximately 875 CY of spoil from the microtunnel launch pit, approximately 310 CY of spoil from the receiving pit, and approximately 250 CY of spoil from the open trench segments and approximately 65 CY of spoil from the interconnect pipe demolition. Excavated material may be reused onsite as backfill; however, this would not be determined until excavation starts. If material cannot be reused for backfill, then it would be exported from the site. For the purposes of this analysis, it is assumed that 50% of the material would be hauled offsite for disposal. After construction is complete, all pipeline construction areas would be restored to pre-construction conditions.

2.4.2 Construction Schedule

Project construction is anticipated to begin in early 2026 and last approximately six months. For Option 1: HDD, the entire length of the pipeline under the creek would be completed in approximately two weeks. For Option 2: Microtunneling, the pipelines would be constructed at a rate of approximately 30 feet of pipeline per day. The interconnect pipe demolition work would last approximately one week. The actual rate of construction would depend on soil conditions, extent of existing utilities, traffic control, and permitted work hours. Construction would take place during daylight hours only. The pipelines would be operational by late 2026.

2.4.3 Temporary Construction Work Areas

The size, location, and number of staging areas would be finalized as part of construction

planning. The intent is for equipment to be staged within Rice Road public right-of-way, much of which is paved in the Project area.

For the pipeline crossing of Salt Creek, using Option 1: HDD, an approximately 15,000 square feet temporary area may be required for HDD and open trench work, located on the north side of Salt Creek. This work area is approximately 80 feet by 224 feet long and is comprised of paved road, non-paved shoulders, and a concrete lined v-ditch. On the south side of Salt Creek, an approximately 8,000 square feet temporary work area may be required for HDD and open trench work. The work area is a trapezoidal-shaped area approximately 80 feet wide with sides that are 213 feet and 152 feet long and is comprised of paved road and non-paved road shoulder. In addition, an additional approximately 800 feet by 20 feet staging area would be required on the south side of Salt Creek extending from the HDD pit to lay down the fused pipe above ground prior to pulling it back through the borehole under the creek. The pipe laydown staging area would utilize the paved portion of Rice Road south of Salt Creek.

For the pipeline crossing of Salt Creek using Option 2: Microtunneling, an approximately 15,000 square feet temporary area may be required for microtunneling and open trench work, located on the north side of Salt Creek. The launch shaft temporary work area is approximately 80 feet by 224 feet long and is comprised of paved road, non-paved shoulders, and a concrete lined v-ditch. On the south side of Salt Creek, an approximately 8,000 square feet temporary work area may be required for microtunneling and open trench work. The reception shaft work area is a trapezoidal-shaped area approximately 80 feet wide with sides that are 213 feet and 152 feet long and is comprised of paved road and non-paved road shoulder.

2.5 Operations

The pipelines would not be associated with long-term energy usage or additional unplanned EMWD operations and maintenance (O&M) activities. Project O&M activities would include inspection and repair, as necessary, of pipeline and would be incorporated into EMWD's existing O&M activities.

2.6 EMWD Standard Construction Practices

EMWD maintains standard construction specifications, practices and procedures for incorporation into the design and construction of all EMWD projects. The following standard construction specifications, practices, and procedures, would be implemented as part of the Project:

- The design and construction of the facilities would be based on a Geotechnical Investigation Report prepared for the Project (Engen Corporation's 2024 Geotechnical Investigation Report) as well as a Geotechnical Baseline Report to be prepared by Stantec in conjunction with the Contract Documents to minimize geological risk. Design and construction would also be in compliance with applicable standards the American Water Works Association, the Greenbook Standard Specifications for Public Works Construction (Greenbook Committee of Public Works Standards, Inc. 2021).

- EMWD would comply with all applicable federal, state, and local regulations pertaining to hazardous materials, including Federal Code Title 40 and 49; Occupational Safety and Health Administration 29 Code of Federal Regulations 1910; CCR section 5001, 5401, 5701, and 25507; California Health and Safety Code Division 20, Chapter 6.5, Article 6.5, Article 6.6, and Article 13; and Riverside County ordinance 651.5. Additionally, the contractor would be required to comply with EMWD Detailed Provisions Section 02201 – Construction Methods & Earthwork of the Standard Detailed Provisions for Flammable or Toxic Materials to prevent spontaneous combustion or dispersion.
- EMWD and its contractors would be required to adhere to EMWD's General Safety Requirements for Hazardous Materials and Hazardous Waste (Specification 1.15 of Section 01000-7) which require proper communication of hazardous substances on a project site, proper storage and disposal of hazardous substances on the site, and clean-up of any spills in accordance with manufacturers', and/or EPA requirements.
- EMWD would comply with federal hazardous materials transportation law (49 U.S.C. 5101 et seq.), and California Health and Safety Code Division 20, Chapter 6.5, Article 6.5 which require precautionary measures be taken during the routine transport of hazardous materials, such as testing and preparation of a transportation safety plan. According to California Health and Safety Code Division 20, Chapter 6.5, Article 13, used oil that may be produced from construction or operation of the Project would be recycled.
- Groundwater encountered during construction would be discharged back into Salt Creek, to land within the temporary construction work areas, as well as used to wet soil during trench backfilling or for general dust control, or discharged to the storm drain, or to EMWD's sewer for treatment and reuse. Discharges would be conducted in accordance with applicable NPDES discharge permits.
- Prior to Project construction, EMWD would require its construction contractor to prepare a Traffic Control and Detour Plan in accordance with US Department of Transportation Manual of Uniform Traffic Control Devices and the California Department of Transportation Manual of Uniform Traffic Control Devices, and Permit requirements, and local Riverside County traffic control requirements. At a minimum, the plan would:
    - Identify staging locations to be used during construction;
    - Identify safe ingress and egress points from staging areas;
    - Identify potential road closures;
    - Establish haul routes for construction-related vehicle traffic;
    - When work is not being performed, require trenches to be covered with an appropriate cover to restore normal traffic flow;
    - Include a detour plan that identifies alternative safe routes to maintain pedestrian and bicyclist safety during construction; and

- Identify roadways and access points for emergency services; and require that disruptions to or closures of these lanes be minimized.
- Include provisions for traffic control measures such as barricades, warning signs, cones, lights, and flag persons, to allow safe circulation of vehicle, bicycle, pedestrian, and emergency response traffic.

EMWD's construction contractor would provide the construction schedule and Traffic Control and Detour Plan to the County of Riverside for review and approval as part of the Encroachment Permit process to ensure that construction of the Project does not conflict with other construction projects that may be occurring simultaneously in the Project vicinity.

- All construction work would require the contractor to implement fire hazard reduction measures. In accordance with EMWD Specifications Detailed Provisions Section 02201 – Construction Methods & Earthwork of the Standard Detailed Provisions, the entire work and site, including storage areas, are inspected at frequent intervals to verify that fire prevention measures are constantly enforced; fully charged fire extinguishers of the appropriate type, supplemented with temporary fire hoses wherever an adequate water supply exists, are furnished and maintained; and flammable materials are stored in a manner that prevents spontaneous combustion or dispersion.
- Construction would comply with South Coast Air Quality Management District (SCAQMD) Rule 403 Fugitive Dust Control requirements as per EMWD's Dust Abatement procedures outlined in EMWD Specifications Detailed Provisions Section 02201 – Construction Methods & Earthwork of the Standard Detailed Provisions.
- EMWD's construction contractor would adhere to Engineering Special Provisions, Special Condition 09, which requires compliance with the California General Permit for Storm Water Discharges Associated with Construction Activity Order No. 2022-0057 Division of Water Quality (NPDES General Permit No. CAS000002), including preparation of a Stormwater Pollution Prevention Plan (SWPPP). Construction would implement BMPs to control water quality of stormwater discharges offsite, according to the SWPPP, such as site management "housekeeping," erosion control, sediment control, tracking control and wind erosion control.
- Staging areas selected by the Project contractor would be located on parcels that are previously disturbed, avoid adverse environmental impacts, and would be required to comply with EMWD's Standard Construction Practices.

2.7 Required Permits and Approvals

Anticipated permits are identified in **Table 2-2**. A California State Water Resources Control Board (SWRCB) Division of Drinking Water Waiver is not anticipated because the Project's pipelines would be compliant with California's Waterworks Standards (CCR, Section 64572, Title 22) parallel and perpendicular separation criteria; however, the need to apply for a waiver would be determined later in the design stage. EMWD would need an encroachment permit from Riverside

County Flood Control and Water Conservation District (RCFC&WCD) due to construction activities occurring on property owned by the RCFC&WCD. RCFC&WCD is a Permittee to the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and, as such, the encroachment permit may specify protection measures that would be implemented during construction activities to address temporary impacts to MSHCP-conserved lands designated as Public/ Quasi-Public (PQP) lands. Protection measures may include restoration of all disturbed areas, including areas disturbed within PQP land, immediately following construction. None of the work that would encroach into the PQP lands would alter the functions and values of these lands. Riverside County Transportation Department (RCTD) would need to issue an encroachment permit for proposed work within the Rice Road right-of-way.

Table 2-2: Permits and Approvals

Responsible Agencies	**Permit or Approval**
Riverside County Flood Control and Water Conservation District	Encroachment Permit
Riverside County Transportation Department	Encroachment Permit
State Water Resources Control Board	NPDES Construction General Permit for Storm Water Discharges
Regional Water Quality Control Board (RWQCB) Santa Ana Region	EMWD NPDES Permit No. CAG998001 for groundwater dewatering discharge
Trustee Agency	**Approval**
California Department of Fish and Wildlife (CDFW)	Notification of plan to address potential release of hydraulic fracturing fluid during HDD (i.e., a "frac-out" plan)

3. ENVIRONMENTAL CHECKLIST FORM

1. **Project title:** Rice Road Pipeline at Salt Creek Project

2. **Lead agency name and address:** Eastern Municipal Water District
   2270 Trumble Road
   P.O. Box 8300
   Perris, CA 92572-8300

3. **Contact person and phone number:** Joseph Broadhead,
   Principal Water Resources Specialist
   broadhej@emwd
   (951) 928-3777 ext. 4545

4. **Project location:** County of Riverside, Community of Winchester, California

5. **Project sponsor's name and address:** Same as Lead Agency

6. **General plan designations:** Residential, Mixed-Use, Open Space

7. **Zoning:** Mixed Use, Residential, Light Agriculture, Open Space – Recreation, Open Space - Conservation

8. **Description of project:** The Rice Road Pipeline at Salt Creek Project involves construction and operation of approximately 800 linear feet of new 24-inch diameter potable water pipeline under Salt Creek along the Rice Road alignment, followed by conversion of approximately 700 linear feet of existing 12-inch and 18-inch potable water pipeline to a recycled water line parallel to the new potable water pipeline under Salt Creek along the Rice Road alignment, new pipeline connections, and demolition and removal of approximately 20 feet of 8-inch pipeline and above-ground assemblies at the intersection of Olive Avenue and Beeler Road.

9. **Surrounding land uses and setting:** The Project area is located within the community of Winchester in unincorporated County of Riverside. Project construction would mostly occur within the County of Riverside rights-of-way for Rice Road and Olive Avenue. Surrounding land uses include mixed-use, residential, and open space.

10. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)**
    - Riverside County Transportation Department (RCTD): Encroachment Permit
    - Riverside County Flood Control and Water Conservation District (RCFC&WCD): Encroachment Permit

- State Water Resources Control Board: NPDES Construction General Permit for Storm Water Discharges (SWPPP)
- Regional Water Quality Control Board (RWQCB) Santa Ana Region: EMWD NPDES Permit No. CAG998001 for groundwater dewatering discharge

11. Have California Native American tribes traditionally and culturally affiliated with the Project area requested consultation pursuant to Public Resources Code section 2180.3.1? 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.?

In March 2025, EMWD sent outreach letters to Native American tribes, who are traditionally and culturally affiliated with the Project area and who have indicated to EMWD that they are interested in receiving notifications. Consultations were held with the Soboba Band of Luiseño Indians on June 2, 2025, the Rincon Band of Luiseño Indians on June 3, 2025, and Pechanga Band of Luiseño Indians on June 4, 2025. Three other Native American tribes were contacted but declined consultation or did not respond.

Environmental Factors Potentially Affected

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

[ ]	Aesthetics	[ ]	Agriculture and Forestry Resources	[ ]	Air Quality
[X]	Biological Resources	[X]	Cultural Resources	[ ]	Energy
[X]	Geology/Soils	[ ]	Greenhouse Gas Emissions	[ ]	Hazards and Hazardous Materials
[X]	Hydrology/Water Quality	[ ]	Land Use/Planning	[ ]	Mineral Resources
[X]	Noise	[ ]	Population/Housing	[ ]	Public Services
[ ]	Recreation	[ ]	Transportation	[X]	Tribal Cultural Resources
[ ]	Utilities/Service Systems	[ ]	Wildfire	[X]	Mandatory Findings of Significance

DETERMINATION: (To be completed by Lead Agency)

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.

[X] 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.



Anthony Budicin, Director ERC

10/31/2025

Date

3.1 Aesthetics

	Potentially Significant Impact	*Less Than Significant Impact 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?	[ ]	[ ]	[X]	[ ]
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	[ ]	[ ]	[ ]	[X]
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?	[ ]	[ ]	[X]	[ ]
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	[ ]	[ ]	[X]	[ ]

Discussion

The Project is located in the community of Winchester, a census-designated place located in an unincorporated area of Riverside County, California. Winchester is situated at the geographic center of Riverside County's Harvest Valley/Winchester planning area. The Harvest

Valley/Winchester planning area is located within a system of broad, sweeping valleys bound by the Menifee Valley to the west and the Domenigoni Valley to the south. Within the planning area, major physical features include the Double Butte, Dawson, and Lakeview Mountains, as well as Diamond Valley Lake. Although the Dawson and Lakeview Mountains predominantly fall in adjacent planning areas, they serve as a strong visual backdrop (County of Riverside 2021a).

The State of California Department of Transportation (Caltrans) manages the State Scenic Highway Program, which was created by the State Legislature in 1963 for the purpose of protecting the natural scenic beauty of California highways. State-designated scenic highways have locally adopted policies to preserve the scenic quality of the corridor. Highways receive designation based on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The portion of Highway 79 adjacent to the Project area is not a state eligible scenic highway and, therefore, is not a designated scenic highway. The nearest state-designated scenic highway is a section of State Route 74 east of Hemet that begins near the intersection with Blackburn Road and extends eastward for approximately 47 miles (Caltrans 2018). This portion of scenic highway is located approximately 18 miles east of the Project area.

Riverside County Ordinance Number 655 regulates light pollution by restricting the permitted use of certain outdoor light fixtures that emit light into the night sky which have a detrimental effect on astronomical observation and research. It defines various zones relative to the distance between the light source and Palomar Observatory and sets requirements for shielding for various types of outdoor lighting (e.g., decorative, parking lots, walkways, security) (County of Riverside 1988).

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

The primary scenic impairments associated with the Project would occur during construction of the Project and would be temporary. During construction, scenic views of surrounding hills and mountains near the Project area would be temporarily altered by construction equipment such as cranes, excavators, and trucks. However, after construction is completed, all disturbed surfaces would be restored to pre-construction conditions.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

Construction of the Project would not occur within an eligible or designated state scenic highway. The nearest officially designated state scenic highway is located approximately 18 miles east of the Project area (Caltrans 2019), outside of the view of temporary construction activities. Therefore, there would be no impact.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

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?

The Project area would be located within the existing Olive Avenue and Rice Road rights-of-way in unincorporated Riverside County, which is a developing area. The Project area is surrounded by vacant and residential land uses. Project implementation may result in short-term effects regarding the visual character or quality of the Project area as a result of disturbed roadways, excavation, trenching, placement of materials, and staging of equipment. Public views in the Project area and vicinity include those from residences, roads, and sidewalks. Public views of the construction activities from sidewalks and roads would be fleeting – on the order of seconds or minutes – while public views of the construction from residences would be longer. However, this short-term effect on visual continuity is considered less than significant because construction would be relatively short; approximately six months. In addition, after construction is completed, all disturbed surfaces would be restored to pre-construction conditions. Construction of the Project would not alter the existing visual environment of the Project area and therefore would not conflict with the Riverside County General Plan or Riverside County zoning regulations.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

Construction would take place during daytime hours in accordance with the Riverside County Ordinance 847 (County of Riverside 2007). No construction activities are planned during nighttime hours (7:00 p.m. to 7:00 a.m.). Further, no new lighting would be installed during construction or as part of the completed Project. Daytime construction could temporarily create a minor new source of glare from construction equipment. However, impacts would be less than significant because construction would be temporary, and equipment would be removed once site restoration is complete. Once construction is complete, the below-ground Project pipelines would not create any permanent lighting or sources of glare in the Project area. Therefore, there would be no long-term impact on daytime and nighttime views in the area.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

3.2 Agriculture and Forestry Resources

	Potentially Significant Impact	*Less Than Significant Impact 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?	[ ]	[ ]	[ ]	[X]
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	[ ]	[ ]	[X]	[ ]

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

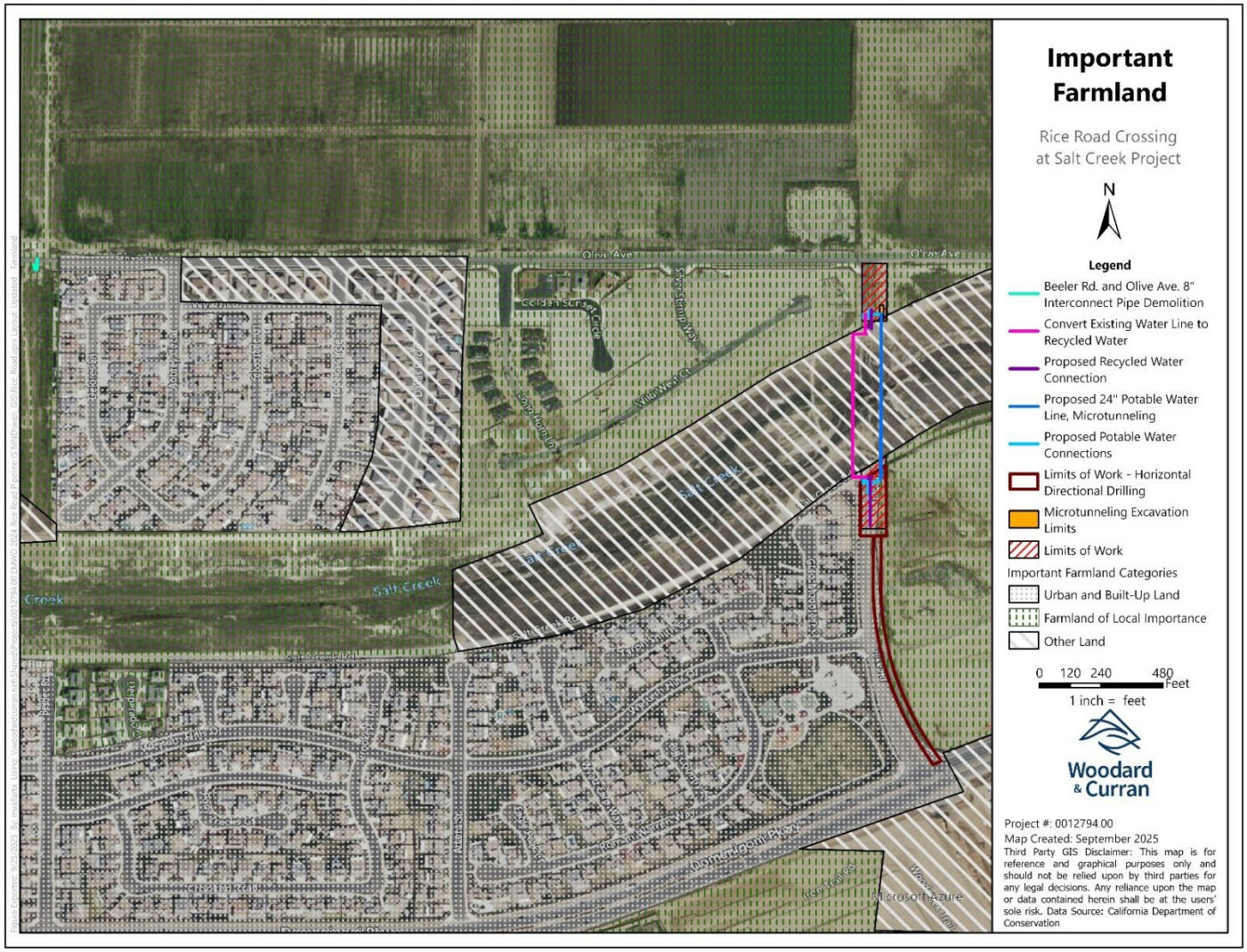
Discussion

The Project area would be partially located on disturbed lands, including paved and unpaved roads, as well as underneath the bed of Salt Creek, within the existing Rice Road right-of-way.

The Project area is designated primarily as Urban and Built-Up Land and Other Land by the California Department of Conservation (CDOC) Farmland Mapping and Monitoring Program. The Project area also has land designated as Farmland of Local Importance (CDOC 2022) that is not currently in agricultural use.

There are no zoning designations or classifications for forestland, timberland, or timberland production on or adjacent to the Project site (County of Riverside 2015a). CDOC land use designations are shown in **Figure 3-1**.

Figure 3-1: Farmland



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?

The Project and staging areas would not be located within or adjacent to any land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use (**Figure 3-1**). Construction activities would not impact or result in the conversion of any farmland to non-agricultural use.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

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

The Project would not be located on or adjacent to a parcel protected by a Williamson Act contract (CDOC 2023). Although the Project would be located adjacent to a parcel zoned for Light Agriculture, that parcel is located within the Salt Creek Channel, a stormwater drainage channel owned and operated by the RCFC&WCD (County of Riverside 2021d) (RCFC&WCD n.d.). The parcel zoned for Light Agriculture is not currently being used for agricultural production.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant 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))?

There is no forest land, timberland, or timberland zoned Timberland Production present within the Project area (County of Riverside 2021d).

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

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

There is no designated forest land or timberland within the Project area (County of Riverside 2021d).

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

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?

The Project would improve the capacities of EMWD's potable and recycled water distribution systems and would accommodate existing and planned potable and recycled water demand within the EMWD service area. Therefore, the Project would not induce any direct conversion of farmland to occur. Under the microtunneling option, the construction dewatering system would temporarily remove groundwater from the microtunneling shaft. However, there would be no permanent impact on groundwater supplies that might impact farmers' ability to pump groundwater for irrigation use, and no indirect conversion of farmland would occur.

Given the absence of forest land in the Project area, there is no potential for the Project to result in the unplanned conversion of forest land to non-forest use.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

3.3 Air Quality

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
Would the Project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	[ ]	[ ]	[X]	[ ]
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?	[ ]	[ ]	[X]	[ ]
c) Expose sensitive receptors to substantial pollutant concentrations?	[ ]	[ ]	[X]	[ ]
d) Result in other emissions (such as those leading to odors or adversely affecting a substantial number of people?	[ ]	[ ]	[X]	[ ]

Discussion

The Project area is located within the South Coast Air Basin (SCAB), which is regulated by the SCAQMD. The SCAQMD monitors air pollutant levels to ensure the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) are met and, if they are not met, to develop strategies to meet the standards. The nearest air monitoring station is located at Lake Skinner Reservoir, on Borel Road in Winchester, approximately 9 miles from the Project area (California Air Resources Board [CARB] 2025b).

The NAAQS, which are required to be set by the United States Environmental Protection Agency (U.S. EPA) under the Clean Air Act, provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly (U.S. EPA 2024). Similarly, the CAAQS are established to protect the health of the most sensitive groups and are mandated by State law. U.S. EPA has set NAAQS for six pollutants, which are called "criteria pollutants:" carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate

matter less than 10 microns in aerodynamic diameter (PM_{10}), particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$), and sulfur dioxide (SO_2). In addition to these, California has added four criteria pollutants: hydrogen sulfide (H_2S), sulfates (SO_4^{2-}), visibility reducing particles, and vinyl chloride (CARB 2025a). In total, the CARB has formally identified over 200 substances and groups of substances as toxic air contaminants.

Depending on whether or not the NAAQS or CAAQS are met or exceeded, the SCAB is classified as being in "attainment" or "nonattainment." The 2022 Air Quality Management Plan (AQMP) (SCAQMD 2022) assesses the attainment status of the SCAB and is summarized in **Table 3-1**. As shown therein, the SCAB is in nonattainment for the State ozone (1-Hour and 8-Hour), PM_{10} (24-Hour and Annual), and $PM_{2.5}$ (Annual) requirements, and for the Federal ozone (1-Hour and 8-Hour), $PM_{2.5}$ (24 hour and Annual), and lead (3-Months Rolling) requirements. Thus, the SCAB is required to implement strategies that would reduce pollutant levels to recognized standards, which is done through the Clean Communities Plan (formerly known as the Air Toxics Control Plan). The Clean Communities Plan is designed to examine the overall direction of the SCAQMD's air toxics control program and includes control strategies aimed at reducing toxic emissions (SCAQMD 2010).

Table 3-1: Criteria Pollutant Attainment Status – SCAB

Criteria Pollutant	Averaging Time	State (CAAQS)	Federal (NAAQS)
Ozone (O_3)	1-Hour	Nonattainment	Nonattainment (extreme)
	8-Hour	Nonattainment	Nonattainment (extreme)
Carbon Monoxide (CO)	1-Hour	Attainment	Attainment (maintenance)
	8-Hour	Attainment	Attainment (maintenance)
Nitrogen Dioxide (NO_2)	1-Hour	Attainment	Unclassifiable/Attainment
	Annual	Attainment	Attainment (maintenance)
Sulfur Dioxide (SO_2)	1-Hour	Attainment	Unclassifiable/Attainment
	24-Hour	Attainment	Unclassifiable/Attainment
Particulate Matter (PM_{10})	24-Hour	Nonattainment	Attainment (maintenance)
	Annual	Nonattainment	No Criteria Defined
Particulate Matter ($PM_{2.5}$)	24-Hour	No Criteria Defined	Nonattainment (serious)
	Annual	Nonattainment	Nonattainment (serious)
Lead (Pb)	30-Day	Attainment	No Criteria Defined
	3-Months Rolling	No Criteria Defined	Nonattainment (partial)
Hydrogen Sulfide (H_2S)	1-Hour	Unclassified/Attainment	No Criteria Defined
Sulfates (SO_4^{2-})	24-Hour	Attainment	No Criteria Defined

Source: SCAQMD 2022

The SCAQMD provides numerical thresholds to analyze the significance of a project's construction and operational emissions on regional air quality. These thresholds are designed such that a project consistent with the thresholds would not have an individually or cumulatively significant impact on the SCAB's air quality. In addition to criteria air pollutants, thresholds have been set for nitrogen oxides (NO_X) and volatile organic compounds (VOCs), also referred to as reactive organic gases, which are O_3 precursors. These thresholds are listed in **Table 3-2**.

Table 3-2: SCAQMD Air Quality Significance Thresholds

Pollutant	Mass Thresholds – Construction Thresholds (lbs/day)	Mass Thresholds – Operation Thresholds (lbs/day)
Nitrogen Oxides (NO_x)	100	55
Volatile organic compounds (VOCs)	75	55
Particulate Matter (PM_{10})	150	150
Particulate Matter ($PM_{2.5}$)	55	55
Sulfur Oxides (SO_x)	150	150
Carbon Monoxide (CO)	550	550
Lead (Pb)	3	3
Toxic Air Contaminants	• Maximum Incremental Cancer Risk $\geq$ 10 in 1 million • Cancer Burden > 0.5 excess cancer cases (in areas $\geq$ 1 in 1 million) • Chronic & Acute Hazard Index $\geq$ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	

Source: SCAQMD 2023

In addition, the SCAQMD has developed localized significance thresholds (LSTs) in response to concern regarding exposure of individuals to criteria pollutants in local communities. LSTs are only applicable to the following criteria pollutants: NO_X, CO, PM_{10} and $PM_{2.5}$. LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area, distance to the nearest sensitive receptor, and project size. For PM_{10} LSTs were derived based on requirements in SCAQMD Rule 403 – Fugitive Dust. For the purposes of a CEQA analysis, the SCAQMD considers a sensitive receptor to be a receptor such as a residence, hospital, or convalescent facility where it is possible that an individual could remain for 24 hours. The use of LSTs is voluntary, to be implemented at the discretion of local agencies.

The LSTs are defined for 38 source receptor areas (SRAs). The Project is located in source receptor area 24 (SRA-24), Perris Valley (SCAQMD 2021). LSTs have been developed for emissions within construction areas up to five acres in size. The SCAQMD provides lookup tables for sites that measure up to one, two, or five acres. The Project would disturb an area greater than one acre

over the construction period; however, the area under active construction at any given time may be less than one acre per day. Because the LSTs for one-acre sites are more conservative than LSTs for two- and five-acre sites, this analysis relies upon the LSTs for a one-acre site for evaluating the exposure of sensitive receptors to air pollutants. LSTs for construction on one-acre sites in SRA-24 are shown in **Table 3-3**. LSTs are provided for a distance of 25 meters (82 feet) from the Project area, which is the most conservative LST distance (LSTs range from 25 to 500 meters). The Project would be bordered by residential neighborhoods, therefore the more conservative LSTs for sensitive receptors within 25 meters are assumed to be applicable to the entire Project.

Table 3-3: SCAQMD LSTs for Construction and Operation

Pollutant	Allowable emissions (lbs/day) from a one-acre site in SRA-24 for a receptor within 25 meters (82 feet)
Gradual Conversion of NO_x to NO_2	118
CO	602
PM_{10} (operation)	1
PM_{10} (construction)	4
$PM_{2.5}$ (operation)	1
$PM_{2.5}$ (construction)	3

Source: SCAQMD 2009

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

The SCAQMD's 2022 AQMP assesses the attainment status of the SCAB, which includes the Project area, and provides a strategy for attainment of State and federal air quality standards. The AQMP strategies are developed based on population, housing, and employment growth forecasts anticipated under local city general plans and the Southern California Association of Government (SCAG)'s 2020 Regional Transportation Plan/Sustainable Communities Strategy, referred to as Connect SoCal (SCAG 2020).

A project would conflict with or obstruct an applicable air quality plan if it would lead to population, housing or employment growth that exceeds the forecasts used in the development of the applicable air quality plan.

The Project involves construction and operation of potable water pipelines and recycled water pipelines to serve developing areas in unincorporated County of Riverside, to meet existing and projected demands for potable water and recycled water. Riverside County is the fastest growing county in California, resulting in the need to upsize existing utilities or construct new utilities to meet the needs of these growing areas in the county. The Project would improve operational benefits to accommodate existing and planned demands for potable and recycled water in EMWD's service area. Construction would not require personnel to relocate from outside the area; jobs would be filled by local workers. The Project would not lead to unplanned population, housing or employment growth that exceeds the forecasts used in the development of the AQMP.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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?

The Project would result in emissions of criteria pollutants from short-term construction activities. Construction emissions were estimated using the California Emissions Estimator Model (CalEEMod) 2022.1.1.21, which is used throughout California to quantify criteria pollutant emissions.

The CalEEMod emissions scenarios were based on Project-specific information, found in *Section 2 Project Description*. In instances where Project-specific information was not available (e.g., construction equipment horsepower, distance of worker trips, soil moisture content), the analysis relied on CalEEMod default values. As explained in *Section 2.4 Project Construction*, it is assumed that construction would begin in early 2026 and have a duration of 6 months. The model also assumes compliance with SCAQMD's Rule 403 (Fugitive Dust) which requires construction projects to implement measures to suppress fugitive dust emissions, such as watering of exposed soils, limiting vehicle speeds on unpaved areas, and covering haul trucks. The complete CalEEMod Air Quality Data Sheets are provided in **Appendix A**.

Construction Emissions

Air emissions of criteria pollutants during construction of the Project would result from the use of construction equipment with internal combustion engines, and offsite vehicles to transport workers, deliver materials to the site, and haul import and export material to and from the site. Project construction would also result in fugitive dust emissions, which would be lessened through the implementation of the fugitive dust control measures required by SCAQMD Rule 403. **Table 3-4** summarizes the maximum daily pollutant emissions during construction of the Project. As shown in **Table 3-4**, construction of the Project would not exceed SCAQMD regional thresholds for any criteria pollutant.

Table 3-4: Project Maximum Daily Construction Emissions Compared to Regional Thresholds (lbs/day)

Emissions Source	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Total onsite and mobile sources	4.5	34.5	38.5	0.01	1.6	1.2
SCAQMD Regional Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Threshold exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: Emissions represent the maximum of winter or summer and are rounded to the nearest tenth. In CalEEMod, SCAQMD Fugitive Dust Control requirements as per EMWD's Dust Abatement procedures are input as construction vehicle control strategies. Therefore, these results and the output tables in Appendix A reflect emissions with implementation of Standard Construction Practices to control fugitive dust.

Operation Emissions

The Project would not be associated with long-term energy usage or additional EMWD O&M activities. Inspection and maintenance of the pipelines and manholes would be incorporated into EMWD's existing O&M activities and would not be expected to require additional vehicle trips. Thus, no new emissions would be associated with operation of the Project.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

c) Expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are typically defined as schools (preschool–12th grade), hospitals, residential care facilities, senior housing facilities, day care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality (CARB 2018). Sensitive receptors within one-half mile of the Project area consist of single-family and multi-family residences, as well as Winchester Elementary School, located at 28751 Winchester Rd, Winchester, CA 92596.

LSTs represent the maximum emissions from a project that will not cause or contribute to an air quality exceedance of the most stringent applicable federal or State ambient air quality standard at the nearest sensitive receptor. The CAAQS and NAAQS provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. If a project is consistent with the latest adopted clean air plan and does not exceed the SCAQMD significance thresholds, it can be assumed that it will not have a substantial adverse impact on public health.

While the use of LSTs is voluntary, the Project emissions were compared to LSTs for the Project area and are provided in **Table 3-5**. LSTs are only applicable to emissions within a fixed, stationary location, such as construction sites, and vary based on project site size. **Table 3-5** provides LSTs that are applicable to the onsite construction activities for the Project, including pipeline trenching, trenchless work, installation of pipeline, and roadway resurfacing. As explained under the discussion above, SCAQMD provides LST lookup tables for sites that measure up to one, two, or five acres; LSTs for construction sites smaller than one acre should use the one-acre threshold.

Table 3-5: Project Maximum Daily Construction Emissions Compared to Localized Significance Thresholds (lbs/day)

Emissions Source	NO_x	CO	$PM_{2.5}$	PM_{10}
Total onsite sources	5.51	6.15	0.19	0.23
Localized Significance Threshold (one-acre, 25 meters)	*118*	*602*	*4*	*3*
Threshold exceeded?	**No**	**No**	**No**	**No**

As shown in **Table 3-5**, construction of the Project would not have a significant air pollution impact on sensitive receptors. Furthermore, as discussed under "b" above, the construction and operational emissions would not exceed SCAQMD regional thresholds or LSTs. Therefore, sensitive receptors would not be subjected to substantial pollutant concentrations.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

The Project would involve emissions of sulfur compounds from the use of oil and diesel fuel during construction, which would potentially result in unpleasant odors. Construction would be temporary and odorous emissions from construction equipment tend to dissipate quickly within short distances from construction sites. Construction activities would not stay in one place for the entire duration of construction, as activities would occur at three distinct sites: south of Salt Creek, north of Salt Creek and at the Beeler Road and Olive Avenue intersection, further limiting the time a stationary receptor may experience odors. Once the Project is operational, the pipelines would not be associated with odors.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

3.4 Biological Resources

	Potentially Significant Impact	*Less Than Significant Impact 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 Game or U.S. Fish and Wildlife Service?	[ ]	[X]	[ ]	[ ]
b) 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 California Department of Fish and Game or U.S. Fish and Wildlife Service?	[ ]	[X]	[ ]	[ ]

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

Discussion

A Biological Resources Technical Report was prepared in October 2025 for the Project (see **Appendix B**). Biological conditions within the Project's Biological Study Area were evaluated by confirming applicable biological regulations, policies, and standards; reviewing biological literature and querying available databases relevant to the Project site and vicinity, and conducting a reconnaissance-level biological survey of the Project site. The complete Biological Resources Technical Report is provided in **Appendix B** and is relied upon for analysis in this IS/MND.

Regulated or sensitive resources studied and analyzed included special status plant and wildlife species, nesting birds, and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement, regionally protected resources, and local protected resources (i.e. protected trees). Potential impacts on biological resources were analyzed based on the following statues:

- California Environmental Quality Act (CEQA)
- Federal Endangered Species Act (CWA)

- California Endangered Species Act (CESA)
- Federal Clean Water Act (CWA)
- California Fish and Game Code (CFGC)
- Migratory Bird Treaty Act (MBTA)
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Act
- Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

Portions of the proposed Project's temporary construction work area could be outside of the existing Rice Road right-of-way adjacent to Salt Creek, in RCFC&WCD land designated PQP under the MSHCP. The MSHCP was developed by Riverside County to aid in maintaining biological and ecological diversity within the region, while addressing requirements of the California Endangered Species Act and Federal Endangered Species Act. The MSHCP is overseen by the Regional Conservation Authority, in coordination with CDFW and U.S. Fish and Wildlife Service (USFWS). The MSHCP describes a conceptual Reserve system that includes existing and proposed Cores, Linkages, and Non-contiguous Habitat blocks to accommodate the needs of plant and wildlife species. The MSHCP was adopted in 2003, and associated permits were issued in 2004. PQP lands are lands that were already protected as open space prior to the MSHCP's inception in 2004. EMWD is not a signatory to the MSHCP.

The literature review was completed to ensure that current and accurate data were integrated into the determination of the Project's environmental and regulatory setting. The literature review included an evaluation of current and historical aerial photographs of the site, regional and site-specific topographic maps, and climate data. Pertinent sources reviewed included, but were not limited to, the following:

- USFWS Information for Planning and Consultation System
- CDFW California Natural Diversity Database
- California Native Plant Society (CNPS) online Inventory of Rare and Endangered Plants of California
- U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey
- USFWS Critical Habitat Portal
- CDFW Biogeographic Information and Observation System
- CDFW Special Animals List
- CDFW Special Vascular Plants, Bryophytes, and Lichens List
- Multiple Species Habitat Conservation Plan (MSHCP)

- National Hydrography Dataset
- National Wetlands Inventory

A field reconnaissance survey was conducted on the morning of January 21, 2025 to document existing conditions of the Project site. The purpose of the survey was to characterize the existing biological conditions, search for special-status plants, animals, and habitats, and to map habitats and potentially jurisdictional aquatic resources. All accessible portions of the Biological Study Area were surveyed on foot. Inaccessible areas included fenced and developed residential communities along the northwestern, southwestern, and southeastern portions of the Biological Study Area, along Rice Road. The inaccessibility of these areas did not affect the biologists' ability to complete a thorough survey. The biologist mapped vegetation communities and land cover types and noted all observations of wildlife and plant species. Most of the Project area appeared to be subject to human disturbance, including recent mowing, vegetation clearance, vehicle tracks, and trash. The survey was conducted outside of the typical bird nesting season (February 1 through August 31).

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

Special Status Wildlife Species

Four special status wildlife species are present or have a moderate potential to occur within the broader Biological Study Area. **Table 3-6** includes these species, their listing status, and their potential to occur. However, as noted in **Table 3-6**, none of these species has a moderate or higher potential to occur in the Project disturbance area. Direct impacts to these species are unlikely, as the Project impacts would be limited to existing paved and dirt roadways. Indirect impacts could occur to all special status wildlife species with the potential to occur due to noise and dust generation during heavy equipment operation and through habitat loss caused by the introduction of invasive plants.

Indirect impacts to nesting birds, including raptors, protected under CFGC Section 3503 and the MBTA (16 United States Code Sections 703-712) could occur if active nests within the 100-foot buffer of the Biological Study Area are abandoned due to Project-related disturbance. Cooper's Hawk, a CDFW Watch List species, was present along the edges of Salt Creek in the Biological Study Area. Direct impacts to Cooper's Hawk are unlikely because Project impacts would be limited to existing paved and dirt roadways, and staging areas are also disturbed/developed lands lacking native vegetation for this species to nest and/or forage. Indirect impacts could occur if Project-related activities cause a disturbance in the vicinity of active Cooper's Hawk nests adjacent to the Biological Study Area.

Crotch's bumble bee, a CDFW State Candidate Endangered species, has low potential to occur in the Project disturbance area. Direct impacts to this species are unlikely as the Project disturbance area would be limited to existing paved and dirt roadways, and staging areas are also

disturbed/developed lands lacking native vegetation. No potential host plants and no burrows that could support nest sites were observed in the road or staging areas during the reconnaissance survey. However, within the broader Biological Study Area, the geographical and elevational range for this species is documented, plant food sources generally are present, but in very limited quantities, the non-native vegetation provides potentially suitable habitat, and suitable burrows (rodent dens) are present. Indirect impacts, such as habitat modification or bees abandoning nest burrows in areas adjacent to the Project disturbance area, could occur if Project-related disturbances extend outside of the Project disturbance area.

American bumble bee, a CDFW Watch List Species, has a moderate potential to occur in the Biological Study Area, but low potential to occur within or adjacent to the Project disturbance area because the project disturbance area lacks suitable habitat. One recorded occurrence less than two miles from the Biological Study Area was recorded in the early 1940s. Direct impacts to this species in the Project disturbance area are unlikely as the Project impacts would be limited to existing paved and dirt roadways, and staging areas are also disturbed/developed lands lacking native vegetation. Indirect impacts could occur if the species is present within the Project disturbance area through habitat modification resulting from the introduction of invasive plants during Project-related activities and/or incidental encroachment of equipment from adjacent construction areas.

Burrowing owl is a CESA Candidate Endangered species and has been observed over 90 times in the nine-quadrangle search area covered in the Biological Resources Technical Report. This species has moderate potential to occur in the Biological Study Area. It has a low potential to dwell and/or nest in the Project disturbance area, although it has a moderate potential to occur within the disturbed habitat, disturbed grassland areas, and within the disturbed/developed rip rap throughout the center of the BSA, particularly near the small mammal burrows. This species may potentially seek shelter within the existing culvert on the western edge of Rice Road, north of Salt Creek. Ground squirrel burrow complexes, which burrowing owls use for nesting, are located in the disturbed/developed habitat along the dirt access roads in the Biological Study Area and potential burrow habitat within the culvert adjacent to Rice Road, although the culvert would not be suitable for nesting. Direct impacts to this species are not anticipated. Indirect Project-related impacts to this species could occur if an active burrow is found during pre-construction surveys adjacent to the Project disturbance area and the burrow is subsequently abandoned due to Project-related disturbance.

Stephen's kangaroo rat, a Federally and State Threatened species, has a moderate potential to occur in the Biological Study Area and a low potential to occur in the Project disturbance area due to lack of suitable habitat. Direct impacts to this species are unlikely as habitat within the Project disturbance area is too rocky to support this species, and no burrows were observed in the road or staging areas during the reconnaissance survey. Indirect impacts could occur if adjacent Project-related disturbance results in Stephen's kangaroo rats abandoning active burrows.

Table 3-6: Special Status Species with Potential to Occur in the Biological Study Area and Project Area

Scientific Name	Common Name	Status[1]	Potential Suitable Habitat in Biological Study Area (BSA)	Potential to Occur (BSA)	Potential to Occur (Project Disturbance Area)
Plants					
Centromadia pungens ssp. *laevis*	smooth tarplant	CRPR 1B.1	Suitable soil type is present within BSA; species known to occur in heavily disturbed areas; occurrences identified in 2013	Moderate	Low
Invertebrates					
Bombus crotchii	Crotch's bumble bee	SCE	Foraging habitat and species' food source not present in Project disturbance area, but present in limited quantities throughout BSA. Additionally , for nesting, species may utilize small mammal burrows present within BSA.	Moderate	Low
Bombus pensylvanicus	American bumble bee	WL	Foraging habitat present in non-native thistle vegetation throughout BSA. Queen may utilize small mammal burrows present within BSA, for overwintering	Moderate	Low
Birds					
Accipiter cooperii	Cooper's hawk	WL	Open areas throughout the BSA	Present. Low nesting potential; High foraging potential	Low
Athene cunicularia	burrowing owl	SSC/SCE	Disturbed habitat, rodent dens in rocky substrate along Rice Road (but not within Project disturbance area), and open pipe culvert (but not suitable for nesting)	Moderate	Low, adjacent to the Project disturbance area
Vireo bellii pusillus	Least Bell's vireo	FE/SE	Marginally suitable habitat within actively managed Mediterranean grass grassland along Salt Creek	Low	No potential
Mammals					
Dipodomys stephensi	Stephen's kangaroo rat	FT/ST	Suitable soil types and marginal flood plain habitat exists to support species burrows; occurrence identified within the last 10 years, less than 1.5 miles from BSA	Moderate	Low

[1]FE = Federally Endangered; FT = Federally Threatened; SCE = State Candidate Endangered; SE = State Endangered; ST = State Threatened; SSC = CDFW Species of Special Concern; WL = CDFW Watch List; 1B = Rare, Threatened, or Endangered in California and elsewhere; 2B= Rare, Threatened, or Endangered in California, but more common elsewhere

Special Status Plant Species

One special status plant species, smooth tarplant, has a moderate potential to occur within the Biological Study Area, but would have a low potential to occur in the Project disturbance area. Direct impacts to special status plants are unlikely because the Project impacts would be limited to existing paved and dirt roadways to the north and south. In addition, the temporary work areas and excavation pits are heavily disturbed, lacking native vegetation and are not expected to support the special status species. In addition, most of the Project disturbance areas appear to be subject to ongoing mowing. Indirect impacts could occur if the species is present within the Project area (but outside the disturbance area) through habitat modification resulting from the introduction of invasive plants during Project-related activities.

Mitigation Measures

Mitigation Measure BIO-1: Worker Environmental Awareness Training. Prior to the initiation of the Project, an approved qualified biologist shall present a Worker Environmental Awareness Training (WEAT) to all on-site personnel. The WEAT will educate the personnel on the identification of special status species and regulated biological resources that are present or have the potential to occur within the Biological Study Area and Project disturbance area, will cover the applicable regulatory policies and provisions regarding their protection, and will provide an overview of the mitigation measures. Furthermore, on-site personnel will be briefed on the communication protocol and reporting process if an inadvertent injury or mortality should occur to a special status species during construction.

Mitigation Measure BIO-2: General Best Management Practices. General Requirements that shall be followed by construction personnel are listed below:

- Contractor shall clearly demarcate the Project limits, staging areas, and access points using appropriate fencing, flagging, or method that results in boundaries that are most obvious to construction crews, and prohibit any construction-related activities from extending outside of these boundaries.
- All food-related trash items, such as wrappers, cans, bottles, and food scraps generated during Project construction, shall be disposed of in closed containers only and removed from the workspace.
- Best management practices (BMPs) shall be implemented throughout the Project and shall include, but not be limited to, erosion and sediment controls to minimize erosion during construction. BMPs shall be implemented for the duration of the Project until disturbed areas have been stabilized by long-term erosion control measures.
- Materials, such as construction equipment, re-bar, pipes, oil, gasoline, tarps, drip pans, and any other construction materials, shall be stored at least 50 feet from Salt Creek, or stored materials will utilize secondary containment.

- Construction materials and spoils shall be protected from stormwater runoff using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw wattle barriers, as appropriate.
- Vegetation trimming shall be limited to the maximum extent feasible.
- Any substances that could be hazardous to wildlife resulting from Project-related activities shall be prevented from contaminating the soil and/or entering waterways.
- Construction shall only occur during daylight hours.

Mitigation Measure BIO-3: Pre-Construction Nesting Bird Surveys. To avoid disturbance of nesting birds, including special status species and birds protected by the MBTA and CFGC Section 3503, Project activities shall occur outside of the breeding season for nesting birds (generally February 1 through August 31), if feasible.

If construction occurs during the breeding season, then a pre-construction nesting bird survey shall be conducted by a qualified biologist/ ornithologist (familiar with avian species known to inhabit Southern California) no more than seven days prior to the initiation of Project activities. Should construction activities not be initiated in any areas of the Project, or be paused, for a period of seven days or longer, pre-construction surveys for nesting birds will be repeated. The nesting bird survey shall be conducted on foot within the Project area and include a 500-foot buffer for raptors and special status species and a 100-foot buffer for all other species. Any area within the survey buffer that may be inaccessible will be carefully examined using binoculars. If nests are found, an exclusion (no disturbance) buffer of up to 500 feet for raptors and special status species and up to 100 feet for non-raptors shall be determined (based on the species, type of terrain/topography, the proposed work activity, noise levels, and existing disturbance associated with land use outside of the workspace) and clearly demarcated by the biologist with construction fencing, flagging, or other obvious method to mark the exclusion buffer. The buffer shall be maintained and nest avoided until the young have fledged and/or the nest is no longer active.

Mitigation Measure BIO-4: Crotch's Bumble Bee Take Avoidance and Minimization. Measures that shall be implemented during Project construction to avoid and/or minimize direct take of Crotch's bumble bee include:

- Pre-construction surveys for Crotch's bumble bee and nests shall be conducted within any potentially suitable habitats within and around the Project disturbance area prior to initial ground-disturbing activities (e.g., grubbing/removing vegetation, excavation, grading, construction). The purpose of these surveys is to identify active nest colonies inside of permanent and temporary impact areas.
- The pre-construction surveys shall follow the survey methodologies set out in the CDFW Survey Considerations for CESA Candidate Bumble Bee or other survey methodology approved by CDFW.

- Pre-construction surveys shall be conducted during appropriate survey periods, specifically within the colony's active period from April through August, as outlined in the CDFW Survey Considerations or as otherwise approved by CDFW.
- If pre-construction surveys identify active nest colonies inside of permanent and temporary impact areas within the Project footprint:
    - An appropriate no disturbance buffer zone shall be established around the active nest colony to reduce the risk of disturbance or accidental take. The buffer distance shall be established by a qualified biologist and will provide no less than 50 feet of clearance around active nest entrances.
    - Project proponent/operator shall consult with a qualified biologist to discuss considerations and recommendations on the implementation of Project activities to avoid take of the Crotch's bumble bee.
- If a no disturbance buffer zone is both appropriate and feasible, construction activities will not occur within that buffer zone until a qualified biologist determines the previously active nest to no longer be active (i.e., no Crotch's bumble bee are seen flying in or out of the nest for three consecutive days [during suitable weather conditions when Crotch's bumble bee are typically active] indicating the colony has completed its nesting season and the next season's queens have dispersed from the colony), after which construction activities may resume within that buffer zone.
- If avoidance of the active nest is not feasible, the Project proponent/operator shall consult with CDFW regarding the potential for Project activities to result in take of the Crotch's bumble bee and shall comply with the avoidance, minimization, and compensatory mitigation requirements set forth in any Incidental Take Permit issued for the Project by CDFW.

Mitigation Measure BIO-5: Biological Pre-Construction Survey and Monitoring. A qualified biologist shall conduct a pre-construction survey of the Project disturbance area and a 50-foot buffer zone for special-status plant species (focusing on smooth tarplant, and assuming Project disturbance area has not been actively mowed) and potential burrows that could support special-status wildlife species within 14 days prior to the start of ground disturbance. Any area within the survey buffer that may be inaccessible will be carefully examined using binoculars. Should construction activities not be initiated in any areas of the Project, or be paused, for a period of 14 days or longer, pre-construction surveys for special status species will be repeated.

If special-status species found, a biological monitor will clearly demarcate (e.g., flagging, fencing, or other method obvious to construction crews) these areas as no-disturbance exclusion zones. The biological monitor will remain on site during all vegetation removal and ground disturbance or other activities that have a potential to directly or indirectly impact special-status species determined present within the Project disturbance area or within 50 feet of the work areas. If needed, the biologist will oversee and provide recommendations to

ensure avoidance of these regulated biological resources and will have the authority to temporarily halt work to protect them. After initial vegetation removal and disturbance is complete, and if no sensitive resources or special-status species are found, the biological monitor will no longer need to be present, but should return during demobilization activities.

Mitigation Measure BIO-6: Burrowing Owl Take Avoidance. Measures that shall be implemented during Project construction to avoid and/or minimize direct take of burrowing owl include:

- Burrowing owl pre-construction surveys shall be conducted by a qualified biologist/ ornithologist within 14 days of the start of ground disturbing construction. The survey area shall include the Project site and a 500-foot buffer around the Project boundary. Any area within the survey buffer that may be inaccessible will be carefully examined using binoculars. Should construction activities not be initiated in any areas of the Project, or be paused, for a period of 14 days or longer, pre-construction surveys for burrowing owl will be repeated.
- If active burrowing owl burrows are detected in the Project boundary or the 500-foot survey buffer, one of the following two options shall apply:
    - Construction shall not occur during the burrowing owl nesting season (typically February 1 to August 31), or
    - Burrowing owl shall be avoided through implementation of an exclusion (no disturbance) buffer demarcated by construction fencing, flagging, or other means to mark the exclusion buffer. Buffer distances are dependent on both the time of year and project disturbance, as outlined in the Staff Report on Burrowing Owl Mitigation by the California Department of Fish and Game. , Depending on distance from Project activities and level of disturbance from noise and human activity, use of haybale stacks or other visual screening may also be used in coordination with the qualified biologist/ ornithologist to shelter the burrow from construction activities and allow for potentially reduced exclusion buffer zones. Any buffer reduction shall be addressed in coordination with CDFW.
- Construction materials shall be made unsuitable for burrowing owl occupation by various methods, including capping open pipes or other materials that could preclude burrowing owls from being attracted to these materials.
- In the unlikely event that burrowing owl cannot be directly and indirectly avoided, EMWD would be required to obtain an Incidental Take Permit from CDFW, along with implementing compensatory mitigation.

Significance Determination

Less than significant impact with mitigation incorporated.

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

Due to the high-level of disturbance present throughout the Project area, salt grass flats was the singular sensitive community identified within the area. Salt grass flats are a vegetation community that is recognized in the Manual of California Vegetation Second Edition and was recently listed as a sensitive natural community by CDFW (see **Appendix B** for further description). This community is located outside of all temporary and permanent impact areas. Direct impacts to these communities are not anticipated because the Project impacts would be limited to existing paved and dirt roadways and within the culvert adjacent to the north portion of the Project disturbance area along Rice Road. Indirect impacts could result during Project construction through the introduction of invasive plant species or from inadvertent contact with heavy machinery.

Mitigation Measures

See **Mitigation Measures BIO-1** and **BIO-3** listed above.

Mitigation Measure BIO-7: Post-Construction Restoration. After construction is complete, EMWD shall immediately restore all areas of disturbance, including Public/Quasi-Public lands (PQP), back to pre-construction conditions or better. Requirements include, but shall not be limited to, the following:

- To establish a restoration baseline, pre-construction site conditions shall be documented and photographed.
- Restoration shall include broadcast of a native seed mix with the following applicable considerations:
    - Native seed mix shall include native plant species occurring in the Biological Study Area, including but not limited to smooth tarplant.
    - Native seed broadcast shall occur in all areas of disturbance to cover the interface between the non-PQP and PQP land, ensuring that native seed mix on PQP land has a better chance of success.
    - Native seed mix shall not include any of the prohibited species listed on MSHCP Table 6-2 Plants that Should be Avoided Adjacent to the MSHCP Conservation Area (i.e., use is prohibited).
    - Native seed mix broadcast is not required within existing paved or compacted dirt road footprints.
- A native plant specialist or botanist shall assess restored areas for native seed establishment every four months for a one-year duration. If it is observed that growth and establishment of the native seed is not successful, additional native seed

broadcasting shall be required, also subject to monitoring until successful establishment has been achieved.

Significance Determination

Less than significant impact with mitigation incorporated.

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?

Potential federal and state jurisdictional features within the Project area include Salt Creek and one singular, dry drainage that conveys flows through a concrete v-ditch culvert that is located on the northern part of the Project area, along Rice Road's eastern edge. Salt Creek likely meets the United States Army Corps of Engineers (USACE) definition of a relatively permanent water (i.e., contains flows for at least 3 months out of the year) and has a direct surface connection to Canyon Lake, a Traditional Navigable Water (TNW) under Section 404 of the Clean Water Act. However, the concrete v-ditch is not likely to be a USACE-jurisdictional waters of the U.S. because it is an ephemeral drainage and is not a relatively permanent water. However, both Salt Creek and the concrete v-ditch potentially fall under the jurisdiction of the Santa Ana RWQCB as waters of the State per the Porter-Cologne Water Quality Control Act, which defines waters of the State as all surface waters within the boundaries of the State, and CDFW as streambeds per Section 1602 of the California Fish and Game Code. If impacted, regulated waters permitting would be required. As stated in the Project Description (see *Section 2.4 Project Construction*), construction staff would be using HDD or microtunneling methods to install the potable water pipeline, which will not involve any open trenching or direct impacts to Salt Creek. HDD or microtunneling would not include any ground disturbance within Salt Creek.

Where open trenching is proposed to occur within the limits of work along Rice Road north of Salt Creek, crews will be excavating for the potable water and recycled water pipeline connections in the vicinity of the potentially jurisdictional culvert. Because the culvert will only be temporarily impacted by the temporary staging of equipment and Project materials, it is not anticipated that direct impact would occur to the potentially jurisdictional culvert adjacent to proposed excavation. Thus, direct impacts to both features will be avoided. Furthermore, removal of riparian trees or vegetation by Project activities would not occur. Indirect impacts to these features are not anticipated.

Mitigation Measures

Refer to **Mitigation Measures BIO-1** and **BIO-2** listed above and **Mitigation Measure HYD-1**, listed below.

Significance Determination

Less than significant impact with mitigation incorporated.

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?

Project activities would be limited to existing roads in the developed and disturbed portions of the Project area, which offer little to no value to wildlife movement. The Project disturbance area does not support substantial wildlife movement. Therefore, impacts to wildlife movement would not result from Project activities.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

There are no protected trees within the Project disturbance area, and tree removal would not be conducted as part of the Project. Therefore, there are no anticipated conflicts with local policies or ordinances protecting biological resources.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

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 Project disturbance area and the entire Biological Study Area falls within the boundaries of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The Biological Study Area falls within the MSHCP burrowing owl species survey area. While EMWD is not a Permittee in the MSHCP and is not directly subject to MSHCP requirements, the presence of suitable burrowing habitat may also trigger focused burrowing owl surveys pursuant to the California Endangered Species Act. Additionally, margins of the BSA are located within PQP land associated with Salt Creek and owned by RCFC&WCD, immediately adjacent to the project site. PQP lands are part of the MSHCP Conservation Reserve, and any impacts to these conserved lands may result in additional requirements as determined by RCFC&WCD, the PQP landowner.

EMWD is not a signatory to the MSHCP and is not required to demonstrate MSHCP consistency through a formal review process with a Permittee or the RCA. However, EMWD is required to demonstrate that the Project would not conflict with any adopted Habitat Conservation Plans and/or Natural Community Conservation Plans.

The Project disturbance area and broader Biological Study Area overlap with an MSHCP designated survey area for burrowing owl. Because EMWD is not an MSHCP Permittee, the focused surveys are not explicitly required. However, burrowing owl is a CESA Candidate species (to be listed as Endangered) and is required to be addressed the same as any other State listed species, and these requirements are typically more stringent than requirements under the MSHCP. Although unlikely to be directly present within the Project disturbance area, burrowing owl could be present within adjacent disturbed habitat, disturbed grassland areas scrub, and within the disturbed/developed rip rap, particularly near the small mammal burrows, and potentially within the existing culvert (but not suitable for nesting) on the western edge of Rice Road, north of Salt Creek.

Additionally, Project construction may occur outside of the Rice Road right-of-way, and therefore may temporarily impact land owned by RCFC&WCD, including PQP land. None of the work that would encroach into the PQP lands would alter the functions and values of these lands; however, if work occurs on PQP land, EMWD will need an encroachment permit from RCFC&WCD, and the RCFC&WCD will determine the requirements for EMWD to obtain an encroachment permit. At a minimum, all disturbed areas, including areas disturbed on PQP land shall be restored immediately following construction as described in **Mitigation Measure BIO-7**, and implementation of MSHCP, Volume I, Section 7.5.3 Construction Guidelines, as well as the Standard Best Management Practices provided in MSHCP, Volume I, Appendix C, may be required.

Additionally, the Biological Study Area falls within the boundaries of the Stephen's Kangaroo Rat Habitat Conservation Plan (HCP). Because EMWD is not a signatory to the Stephen's Kangaroo Rat HCP, the Project is not subject to payment of the associated mitigation fee. Nevertheless, the Project cannot conflict with the Stephen's Kangaroo Rat HCP. The Project site is too rocky and mountainous to support the Stephen's Kangaroo Rat and the Project disturbance area would be confined to disturbed and developed lands; thus, no loss of Stephen's kangaroo rat habitat will occur.

Mitigation Measures

Refer to **Mitigation Measure BIO-7** listed above.

Significance Determination

Less than significant impact with mitigation incorporated.

3.5 Cultural Resources

	Potentially Significant Impact	*Less Than Significant Impact 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 Section 15064.5?	[ ]	[ ]	[X]	[ ]
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	[ ]	[ ]	[X]	[ ]
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	[ ]	[X]	[ ]	[ ]

Discussion

A Cultural Resources Technical Report was prepared for the proposed Project in October 2025 by Rincon Consultants. The report includes a cultural resources records search of the California Historical Resources Information System (CHRIS) at the South Coastal Information Center (SCIC), a Sacred Lands File (SLF) search conducted by the Native American Heritage Commission (NAHC), a review of historical aerial imagery and topographic maps, pedestrian surveys of the project site, and geoarchaeological analysis. As part of the report, the National Register of Historic Places, the California Register of Historical Resources, the California Historical Landmarks list, the Archaeological Determination of Eligibility list, and the Built Environment Resources Directory, as well as its predecessor the California State Historic Property Data File, were also reviewed. The Cultural Resources Technical Report is provided in **Appendix C**.

A discussion of the proposed Project's potential impacts to tribal cultural resources, including tribal outreach and consultation, is provided in *Section 3.18 Tribal Cultural Resources*.

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

On May 20, 2025, a records search of the CHRIS was requested. The purpose of a records search is to identify previously recorded cultural resources, as well as previously conducted cultural

resources studies within the project site and a one-mile radius surrounding it. Results from the records search identified 81 previously recorded cultural resources studies completed within one mile of the proposed Project area, of which 11 overlap portions of the Project site. The entire Project site has been subjected to survey by the previous studies. As part of the Cultural Resources Technical Report, a pedestrian survey of the proposed Project was conducted on June 10, 2025.

The CHRIS records search and background research identified 96 cultural resources within one mile of the Project area. Of these, one historic period road segment of Olive Avenue overlaps the project site at Rice Road. References had previously recommended the resource as ineligible for inclusion for the NRHP and CHHR. No other historical built environment properties were identified during the field survey and review of historical aerial imagery and topographic maps. Therefore, the Project does not have the potential to impact historical built environment resources and there would be no impact to historical resources pursuant to CEQA. The proposed Project is expected to have a less than significant impact on Cultural Resources.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

In addition to the California Historical Resources Information System records searches, a search of the NAHC SLF was requested on January 28, 2025. The SLF returned negative results for the presence of Native American cultural resources.

The results of the CHRIS records search suggest the vicinity of the Project site is sensitive for prehistoric archaeological resources. One previously recorded multi component pre-contact archaeological site is located adjacent to the Project site east of Rice Road. No artifacts or features associated with the resource were identified during the field survey; however, the southern portion of the resource was observed within an open space and landscaped area adjacent to but outside of the Project site. The resource has not been previously evaluated for the CRHR and, therefore, has the potential to qualify as a historical resource pursuant to CEQA. However, no impacts to the resource are anticipated because the area has been graded and developed, and the Project, as designed, would not alter the resource.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

As stated under "b" above, although there are no known archaeological resources within the Project sites, the Project area is considered sensitive based on previous studies and the locations of known archaeological deposits. The proposed Project would involve ground disturbing activities during construction and there is potential to encounter previously unknown human remains.

Mitigation Measures

CUL-1 Procedure for the Discovery of Human Remains. If Native American human remains are encountered, Public Resources Code Section 5097.98 and California Health and Safety Code Section 7050.5 will be followed. If human remains are encountered no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to the origin. Further, pursuant to California Public Resources Code Section 5097.98(b), the remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the coroner shall contact the NAHC within 24 hours. Subsequently, the NAHC shall identify the person or persons it believes to be the "most likely descendant." The most likely descendant shall then make recommendations and engage in consultations concerning the treatment of the remains as provided in Public Resources Code Section 5097.98.

Significance Determination

Less than significant impact with mitigation incorporated

3.6 Energy

	Potentially Significant Impact	*Less Than Significant Impact 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?	[ ]	[ ]	[X]	[ ]
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	[ ]	[ ]	[X]	[ ]

Discussion

Energy resources include diesel fuel, gasoline, natural gas, electricity, and other fuels. Electricity production requires the consumption or conversion of resources, including water, wind, oil, gas, coal, solar, geothermal, or nuclear resources, into energy. Energy production and energy use both result in the depletion of nonrenewable resources (e.g., oil, natural gas, coal) and emission of pollutants. Energy consumption is typically measured using the British Thermal Unit (Btu), which is the amount of energy required to raise the temperature of one pound of water by one-degree Fahrenheit. Electrical power is measured in watts; one kilowatt hour (kWh) is a measure of electricity equivalent to 3,412 Btu.

According to the California Energy Commission (CEC), California's total system electric generation in 2023 was 281,140 gigawatt-hours (GWh) (CEC 2024a). Total non-GHG and renewable energy (i.e., solar, wind, nuclear, hydroelectric, geothermal, and biomass) made up 57.90 percent, whereas non-renewables (i.e., natural gas, coal, and other) comprised 42.10 percent (CEC 2024a).

According to CEC surveys on retail sales of gasoline, diesel, and other transportation fuels (CEC 2024b), gasoline is the most used fuel in California's transportation sector. Statewide in 2023, there were 11,685 million gallons of gasoline sold, 2,016 million gallons of diesel sold, and 95.25 million gallons of E85 sold as transportation fuel.

Electrical service for the Project area is provided by Southern California Edison (SCE). SCE is one of the largest providers of electricity in southern California and serves 15 million people, 180

incorporated cities, and 15 counties (SCE n.d.). According to SCE's power content label for 2022, its electricity comes from approximately 33.2 percent renewables, 3.4 percent large hydroelectric, 24.7 percent natural gas, 8.3 percent nuclear, and 30.3 percent from other and unspecified power sources through transactions (SCE 2022).

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

Construction of the Project would involve construction-related fossil fuel consumption from the operation of diesel-powered construction equipment and on-site generators as well as fossil fuel consumption for material hauling, delivery, and worker vehicle trips. The anticipated construction fleet for the Project would be comprised of typical construction equipment. **Table 2-1** in *Section 2.4.1 Pipeline Construction* summarizes the anticipated construction fleet for the Project.

The Project would implement typical construction practices such as site clearing and grading, excavating and installation, and site restoration. As shown in **Table 2-1**, the Project would not require unusual or excessive construction equipment or practices that would result in wasteful, inefficient, or unnecessary consumption of energy compared to projects of similar type and size. In addition, the construction fleet contracted for the Project would be required to comply with applicable State regulations, including the CARB In-Use Off-Road Diesel-Fueled Fleets Regulations, which would limit vehicle idling time to five minutes, restrict adding vehicles to construction fleets with older-tier engines, and establish a schedule for retiring older, less fuel-efficient engines from the construction fleet.

Additional vehicle trips are required for hauling, deliveries, and worker vehicle trips. However, for the purposes of this analysis, it is conservatively assumed that 50 percent of excavated trench material would be hauled off site for disposal, while the rest would be reused onsite. Haul trucks carry approximately 16 CY per load requiring up to 20 one-way trips per day for the Project.

The pipeline would not be associated with long-term energy usage or additional EMWD O&M activities. Inspection of the pipeline would be incorporated into EMWD's existing O&M activities and would involve portable monitoring equipment. Furthermore, O&M activities would be conducted using EMWD's vehicle fleet, which is continually being improved with regard to efficiency and fuel type. As such, construction and operation of the Project would not result in wasteful, inefficient, or unnecessary consumption of energy.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

The Project would not interfere with state or local plans related to renewable energy or energy efficiency. The construction fleet contracted for the Project would be required to comply with CARB In-Use Off-Road Diesel-Fueled Fleets Regulations, which would limit vehicle idling time to five minutes, restrict adding vehicles to construction fleets with older-tier engines, and establish a schedule for retiring older, less fuel-efficient engines from the construction fleet. The Project would not result in a net increase beyond existing levels in energy use or vehicle trips during operation.

Operation of the Project would be incorporated into EMWD's existing O&M activities and would not result in an increase in new vehicle trips. The Project would not involve land use changes that would indirectly result in an increase in vehicle trips or vehicle miles travelled. As explained under question "a" above, the construction and operation of the Project would not involve wasteful or inefficient energy consumption. Therefore, the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

3.7 Geology and Soils

	Potentially Significant Impact	*Less Than Significant Impact 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.	[ ]	[ ]	[ ]	[X]
	ii) Strong seismic ground shaking?	[ ]	[ ]	[X]	[ ]
	iii) Seismic-related ground failure, including liquefaction?	[ ]	[ ]	[X]	[ ]
	iv) Landslides?	[ ]	[ ]	[X]	[ ]
b)	Result in substantial soil erosion or the loss of top soil?	[ ]	[ ]	[X]	[ ]
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	[ ]	[ ]	[X]	[ ]
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	[ ]	[ ]	[X]	[ ]
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?	[ ]	[ ]	[ ]	[X]
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	[ ]	[X]	[ ]	[ ]

Discussion

The community of Winchester is located south of Double Butte and north of Salt Creek. As with many regions in Southern California, the area is located in a seismically active area. The San Jacinto Fault Zone is roughly 9 miles east of Winchester, while the Elsinore Fault Zone is approximately 13 miles to the west of the City (CDOC n.d.a). Based on the latest update of the California Earthquake Hazards Zone Application Map, the City is not located within a landslide or liquefaction zone (CDOC n.d.a). A Project-specific geotechnical report was completed by EnGEN Corporation for the Project. The complete Geotechnical Investigation Report is provided in **Appendix D**.

Most of the Project site is underlain by Holocene alluvial valley deposits, which often consist of unconsolidated sand, silt, and clay. Holocene-age deposits are less than 5,000 years old, younger than the age typically needed to preserve paleontological resources and therefore considered to have low paleontological sensitivity. However, Holocene-aged geologic units are underlain by older sediments that could potentially yield fossils. In the southwestern corner of the Project site, Pleistocene alluvial fan deposits are present, which are often characterized by hardened and dissected reddish-brown gravel and sand. Pleistocene-aged deposits in Riverside County have yielded significant fossils such as mastodon, horse, coyote, rabbit, reptiles, birds, and invertebrates, and are therefore considered to have a high paleontological sensitivity. The southeastern corner of the Project site is underlain by granodiorite and tonalite of the Domenigoni Valley, formed in the Cretaceous. These igneous rocks cannot preserve fossils and thus have no paleontological sensitivity. A complete Paleontological Resource Assessment is provided in **Appendix E**.

a.i) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: 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 41.

The potential for ground rupture is most likely to occur along the traces of active faults. Although the Project area is in a seismically active region of Southern California, the Project area is not within a State of California Earthquake Fault Zone based on the most recent Alquist-Priolo Earthquake Fault Zoning Map (CDOC n.d.a). The nearest potentially active fault zone mapped in accordance with the Alquist-Priolo Earthquake Fault Zoning Act is the San Jacinto Fault Zone. The shortest distance between this Fault Activity Zone and the Project area is 9 miles. Due to the distance of the Fault Zone, there is no potential for surface fault rupture in the Project area.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

a.ii) Directly or indirectly caused potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking?

The intensity of the ground shaking would depend on the magnitude of an earthquake, distance to the epicenter, and the geology of the area between the epicenter and Project area. Within the Project vicinity, the San Jacinto Fault Zone (approximately 9 miles east of the Project area) is capable of generating earthquakes with strong ground shaking. The geotechnical investigation report (EnGen Corporation 2024) prepared for the Project states that there are no active faults projecting toward or crossing the Project area and the Project is not located within an Alquist-Priolo Fault Hazards Zone (EnGen Corporation 2024). However, ground shaking from earthquakes associated with nearby and distant faults may occur during the lifetime of the Project (EnGen Corporation 2024).

Seismic activity is common in California generally. The Project would be designed and constructed pursuant to the recommendations and requirements of the geotechnical investigation report prepared for the Project, as well as a Geotechnical Baseline Report to be prepared by Stantec in conjunction with the Contract Documents to minimize geological risk. In accordance with EMWD's existing Standard Construction Practices (see *Section 2.6 EMWD Standard Construction Practices*), the Project facilities would be designed per EMWD's Engineering Standards and Specifications, as well as applicable American Water Works Association standards, and would incorporate measures to accommodate seismic loading pursuant to guidelines such as the Greenbook Standard Specifications for Public Works Construction (Greenbook Committee of Public Works Standards, Inc. 2021) and the International Building Code (International Code Council 2018), and the California Building Code (CCR, Title 24, Part 2). These guidelines are produced through joint efforts by industry groups to provide standard specifications for engineering and construction activities, including measures to accommodate seismic loading parameters. These standards and guidelines are widely accepted by regulatory authorities and are regularly included in related standards such as municipal building and grading codes. Because building and construction codes related to seismic shaking would be followed, there would be less potential for structural damage or loss due to seismic ground shaking. Even if structural damage does occur during a seismic event, it would be isolated to the various Project components; the Project would not exacerbate a risk of seismic-related events or damage to other existing resources in the vicinity.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

a.iii) Directly or indirectly caused potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction?

Liquefaction is the process by which clay-free soil, such as sands and silts, temporarily lose cohesion and strength and turn into a fluid state during a severe ground shaking event. This primarily occurs in areas saturated with high groundwater levels and recent deposits of sands and silts. The California Earthquake Hazards Zone Application map does not indicate that the Project area is in a liquefaction zone, and the geotechnical investigation report for the Project indicates a low risk for landslides in the Project area. All Project facilities would be designed in accordance with EMWD's Engineering Standards and Specifications, the applicable geotechnical reports, and the other standards and guidelines described under "a.ii" above, that would ensure pipeline resiliency during earthquakes and other ground instability events, such as liquefaction.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

Seismically induced landslides and slope failures are common occurrences during or soon after large earthquakes. Landslides can occur when strong ground movement such as an earthquake shakes loose soil and causes land and debris to lose stability and slide. The Project area is not located in a landslide susceptibility zone (CDOC n.d.a), and the geotechnical report for the Project found the Project area to have a low risk of landslides (EnGen Corporation 2024). All Project facilities would be designed in accordance with EMWD's Engineering Standards and Specifications, as well as the other standards and guidelines described under "a.ii" above, including recommendations in the applicable geotechnical reports for the Project. Following these standards, guidelines, and policies would limit the potential for the Project to directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death resulting from a Project failure during a seismically induced landslide or slope failure.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

Construction of the Project components would require soil-disturbing activities such as excavation, which would expose soil. Exposed soil piles are susceptible to erosion during strong winds, heavy rains, or other storm events. Construction of the Project would disturb a total area greater than one acre in size and would therefore be required to obtain coverage under the SWRCB's NPDES Stormwater Construction General Permit during Project construction. A Storm Water Pollution Prevention Plan (SWPPP) would be prepared and implemented in compliance with the Construction General Permit. Best management practices (BMPs) would be identified in the SWPPP to control and reduce impacts associated with construction activities and erosion of soil. In accordance with EMWD's Standard Construction Practices (see *Section 2.6 EMWD Standard Construction Practices*) potential BMPs include site management "housekeeping," erosion control, sediment control, tracking control and wind erosion control. With implementation of the standard construction BMPs, the potential for soil erosion or the loss of topsoil during construction of the Project would be less than significant. Once construction is complete, all disturbance areas would be returned to pre-Project conditions and would not result in further Project-related soil erosion.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant 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?

The Project area is underlain by young alluvial valley deposits of Holocene to late Pleistocene age (EnGen Corporation 2024). These deposits consist of interbedded silty sands and sand/silt clay mixtures, and gravelly sands with possible cobbles (EnGen Corporation 2024). Similar to the seismically-induced landslide risks address in response "a.iv" above, and the liquefaction risks address in response "a.iii" above, the Project has a low potential for risks related to unstable soils that could result in landslides, liquefaction, or lateral spreading which is induced by liquefaction (EnGen Corporation 2024). Additionally, adherence to the Geotechnical Investigation Report design recommendations (EnGen Corporation 2024), EMWD's Engineering Standards and Specifications, and other standards and guidelines would ensure structural resiliency to earthquake events and any other causes of lateral spreading or liquefaction. Therefore, implementation of the Project is not expected to result in significant risk of landslide, lateral spreading, or liquefaction.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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?

Expansive soils have the ability to significantly change their volume, shrink and swell, due to their soil moisture content. Expansive soils can crack rigid structures and potentially create pipeline rupture. Typically, expansive soils are very fine grained with a high to very high percentage (60 percent or more) of clay. Based on laboratory test results in the geotechnical investigation report prepared for the Project, the soils in contact with the proposed pipeline will have very low expansive properties (EnGen Corporation 2024).

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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?

The Project would not involve the construction or use of septic tanks or alternative wastewater disposal systems.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

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

Fossils are valuable and nonrenewable resources of remains of ancient, commonly extinct organisms that help humans understand the evolutionary history of life on earth. A paleontological study was completed in compliance with CEQA, federal, state, and local regulations to determine the potential Project impacts to paleontological resources in the Project area (**Appendix E**). The California Public Resources Code (Section 5097.5) prevents an individual from removing, destroying, or altering any paleontological resources found on public lands without the permission of the public agency that has jurisdiction over the lands.

A Paleontological Resource Assessment Report was prepared in October 2025 for the Project (**Appendix E**). The Paleontological Resource Assessment consisted of a review of existing geologic maps, records search from the Western Science Center, and primary literature regarding geologic units within the Project site and vicinity. Following the literature review, it assessed the paleontological sensitivity of the geologic units underlying the Project site and determined the potential for impacts to significant paleontological resources. The potential for impacts to significant paleontological resources was assessed based on the potential for ground disturbance to directly impact paleontological sensitive geologic units as defined by the Society of Vertebrate Paleontology (SVP).

As found in the Paleontological Resource Assessment Report, the Project site is directly underlain by Holocene alluvial valley deposits, Pleistocene alluvial fan deposits, and Granodiorite and Tonalite of the Domenigoni Valley (see **Figure 3-2**). Holocene-aged geologic units, such as Holocene alluvial deposits, are underlain by older, potentially high-sensitivity sediments in the subsurface. Pleistocene-aged alluvial sediments within Riverside County are known to preserve paleontological resources. Due to the proximity of the Holocene alluvial valley deposits to Pleistocene alluvial fan deposits, Pleistocene sediments could occur at depths of 5 feet or deeper beneath the surficial Holocene alluvial valley deposits.

The Western Science Center records search indicated that there are no known fossil localities within the Project site. However, records reported eight fossil localities from Pleistocene alluvial sediment within 1 mile of the Project site. Seven of these localities lie along Salt Creek between approximately 1 and 3.5 miles from the Project site. The most common fossils from these localities are rodents and other small mammals, but camel (Camelops), horse (Equus), bird, reptile, amphibian, and invertebrate fossils have been found as well.

Ground-disturbing activities within previously undisturbed sediments with high paleontological sensitivity could result in significant impacts to paleontological resources. Impacts would be significant if construction activities result in the destruction, damage, or loss of scientifically important paleontological resources and associated stratigraphic and paleontological data. Areas mapped as Pleistocene alluvial fan deposits have high paleontological sensitivity at any depth, and areas mapped as Holocene alluvial valley deposits have high paleontological sensitivity greater than 5 feet below the surface.

Open-cut trenching is anticipated to impact Pleistocene alluvial fan deposits and reach greater than 5 feet below the surface in areas mapped as Holocene alluvial valley deposits. Excavations for the microtunneling launch pit and receiving shaft or HDD entry and exit pits are anticipated to impact sediments greater than 5 feet below the surface in areas mapped as Holocene alluvial valley deposits. However, drilling for HDD, microtunneling and dewatering wells are unlikely to produce spoils that can be monitored for significant paleontological resources.

Figure 3-2: Geologic Map and Paleontological Sensitivity of the Project Site



Source: Rincon Consultants, 2025 (Appendix E)

Mitigation Measures

Mitigation Measure GEO-1: Qualified Professional Paleontologist. Prior to excavation, EMWD shall retain a Qualified Professional Paleontologist, as defined by the SVP, who shall direct all mitigation measures related to paleontological resources.

Mitigation Measure GEO-2: Paleontological Worker Environmental Awareness Program. Prior to the start of construction, the Qualified Professional Paleontologist or their designee shall conduct paleontological WEAP training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction personnel.

Mitigation Measure GEO-3: Paleontological Salvage and Curation. In the event of a fossil discovery, all construction activity within 50 feet of the find shall cease, and a Qualified Professional Paleontologist shall evaluate the find. If the fossil(s) is (are) not scientifically

significant, then construction activity may resume. If it is determined that the fossil(s) is (are) scientifically significant, the following shall be completed:

- **Fossil Savage.** The paleontological monitor shall salvage (excavate and recover) the fossil to protect it from damage/destruction. Typically, fossils can be safely salvaged quickly by a single paleontological monitor with minimal disruption to construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. Bulk matrix sampling may be necessary to recover small invertebrates or microvertebrates from within paleontologically sensitive deposits. After the fossil(s) is (are) salvaged, construction activity may resume.
- **Fossil Preparation and Curation.** Fossils shall be identified to the lowest (most-specific) possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Professional Paleontologist.

Significance Determination

Less than significant impact with mitigation incorporated.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	*Less Than Significant Impact 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?	[ ]	[ ]	[X]	[ ]
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	[ ]	[ ]	[X]	[ ]

Discussion

Greenhouse gases (GHGs) are pollutants that are known to increase the greenhouse effect in the Earth's atmosphere thereby adding to global climate change impacts. Several pollutants have been identified as GHGs, and the State of California definition in the Health and Safety Code, Section 38505(g) includes carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (CARB 2025a). Water vapor is also identified as a GHG; however, it is short lived, and concentrations are largely determined by natural processes such as evaporation. Other GHGs such as fluorinated gases are created and emitted through anthropogenic sources. The most common anthropogenic GHGs are CO_2, CH_4, and N_2O.

A measurement called global warming potential (GWP) is used to measure how much energy the emissions of one ton of a gas will absorb over a given period of time, relative to the emissions of one ton of CO_2. CO_2e is the amount of GHG emitted multiplied by its GWP. CO_2 has a 100-year GWP of one; CH_4 has a GWP of 25; and N_2O has a GWP of 298 (CARB 2025a).

In 2005, the Governor issued Executive Order (EO) S-3-05, which set GHG emission reduction targets:

- 2010 should have 2000 levels;
- 2020 should have 1990 levels; and
- GHG emissions should be 80 percent below 1990 levels by 2050.

Senate Bill (SB) 32, passed in 2016, required that the CARB include in its next update to the Assembly Bill (AB) 32 Scoping Plan, "ensure that statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit no later than December 31, 2030." (EO) B-55 set a GHG emission reduction target for California to be carbon neutral by 2045.

CARB adopted Climate Change Scoping Plan in 2008 and a Climate Change Scoping Plan Update in 2017, which contains the strategies California will implement to achieve a GHG emissions reduction of 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. In the Scoping Plan, "CARB recommends that lead agencies prioritize onsite design features that reduce emissions, especially from vehicle miles travelled (VMT), and direct investments in GHG reductions within the project region that contribute potential air quality, health, and economic co-benefits locally."

The Project area overlies the unincorporated community of Winchester, Riverside County and is located within the jurisdiction of the SCAQMD. The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace the CEQA Air Quality Handbook approved by the SCAQMD Governing Board in 1993. In order to assist CEQA-related air quality analysis while the new Handbook is being prepared, SCAQMD updated its Air Quality Significance Thresholds in March 2023. The SCAQMD has set a threshold of 10,000 $MTCO_2e$/year for industrial facilities (SCAQMD 2023).

The County of Riverside Climate Action Plan (CAP) was adopted in 2015 to establish goals and policies that incorporate sustainability and GHG reduction targets into its management process. The County of Riverside adopted a CAP Update in 2019 which re-evaluated the County's GHG reduction targets and existing reduction strategies. The new goals and supporting measures are proposed to reflect and ensure compliance with changes in the local and State policies and regulations which set a 2030 goal of reducing emissions to 40 percent below 1990 levels by 2030, and to make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. In particular, the 2019 CAP Update elaborates on the County of Riverside's General Plan goals and policies relative to GHG emissions and provides a specific implementation tool to guide future decisions of the County (County of Riverside 2019).

The County's CAP includes a review process procedure for evaluating individual project GHG impacts and determining the significance under CEQA. The County's CAP is qualified for CEQA tiering and streamlining of individual projects' CEQA review. The County's CAP has set a threshold of 3,000 metric tons CO_2e per year to be used to identify projects that, when combined with the modest efficiency measures (e.g., energy efficiency matching or exceeding the Title 24 requirements in effect as of January 2017; water conservation measures that match the California Green Building Standards Code in effect as of January 2017) are considered less than significant (County of Riverside 2019).

EMWD has a CAP outlining the strategies, goals and actions being taken to reduce the District's operational GHG emissions. Like the County of Riverside, EMWD's CAP was adopted in response to Senate Bill 32 which directs the state to reduce GHG emissions to 40 percent below 1990 levels by 2030. There are no project-specific limits established by EMWD's CAP, however the district must reduce its annual emissions to approximately 58,218 MT CO_2e by 2030. The District is looking to achieve this target through three Core Measures: ICE (internal combustion engines) conversion, (e.g., ICE engines will be transitioned to electric engines in O&M and construction vehicles), energy efficiency improvements, and water conservation (EMWD 2022).

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

The Project would create GHG emissions during construction. Construction is expected to last approximately 6 months, and the Project's life expectancy is conservatively assumed to be 30 years for the purposes of this GHG analysis, in accordance with SCAQMD guidance (SCAQMD 2008). Construction impacts would include vehicle and equipment emissions associated with pipeline trenching and installation, manhole construction, and road resurfacing. The Project would not generate a net increase in operation emissions because the pipelines would not require energy use to operate, and inspection of the pipelines would be incorporated into EMWD's existing O&M trips. Further details can be found in *Section 2 Project Description*.

Modeling of GHG emissions from construction of the Project was completed in CalEEMod version 2022.1.1.21. Details on construction, including timing and equipment, can be found in *Section 2.4Project Construction*. In instances where Project-specific information was not available (e.g.,

construction equipment horsepower, length of worker trips, soil moisture content), the analysis relied on CalEEMod default values. The Project would not emit GHGs associated with electricity consumption; all GHG emissions would result from vehicle and equipment use, including construction equipment, generators used during construction, haul trips, and worker trips. No energy would be required for the operation of the pipelines. The complete CalEEMod Air Quality Data Sheets are provided in **Appendix A**.

The results of the inventory for GHG emissions for the Project, as shown in the CalEEMod output tables in **Appendix A**, are presented in **Table 3-7** along with the County of Riverside 2019 CAP threshold of 3,000 metric tons CO_2e per year. Consistent with the methodologies in the SCAQMD 2008 Board Letter, total GHG emissions from construction have been amortized over a 30-year lifetime of the Project.

Table 3-7: GHG Emissions per Year ($MTCO_2e$/year)

Source	**$MTCO_2e$**
Operation	negligible
Construction (amortized over 30 years)	10
Total	**10**
Regional Threshold	*3,000*
Threshold exceeded?	**No**

Based on the results of CalEEMod, construction of the Project would emit a total of approximately 300 $MTCO_2e$. Amortized over a 30-year period, construction of the Project would generate approximately 10 $MTCO_2e$ per year. In addition to the low per-year generation of $MTCO_2e$, the Project would adhere to existing energy efficiency requirements during construction, including CARB's In-Use Off-Road Diesel-Fueled Fleets Regulations that limit vehicle idling time to five minutes restrict adding vehicles to construction fleets that have lower than Tier 3 engines, and establish a schedule for retiring older and less fuel-efficient engines (CARB 2011). The State of California has set targets for renewable energy from the energy sector through the Renewable Portfolio Standard. The Renewable Portfolio Standard directs energy utilities to source half of their electricity sales from renewable sources by 2030 (CEC 2017). The Project would not consume electricity during construction or operation.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

California's 2022 Climate Change Scoping Plan for Achieving Carbon Neutrality lays out a path to achieve targets for carbon neutrality and reduce anthropogenic greenhouse gas emissions by 85 percent below 1990 levels no later than 2045. The Project would not involve a considerable increase in new vehicle trips or land use changes that would result in an increase in vehicle trips, such as urban sprawl. The Project is designed to meet existing and anticipated demand that would occur with or without the Project and would not conflict with any 2022 Climate Change Scoping Plan emission reduction strategies or climate change policies or measures (CARB 2022). Furthermore, O&M activities would be conducted using EMWD's vehicle fleet, which is continually being improved with regard to efficiency and fuel type, consistent with the County of Riverside 2019 CAP Update.

The Project would not interfere with existing City, County, or regional programs intended to reduce energy and improve water use efficiency. It would not result in GHG emissions higher than the SCAQMD significance screening threshold or the County of Riverside 2019 CAP $MTCO_2e$ /year threshold. The Project would not, therefore, conflict with or obstruct a State or local plan for reducing emissions of GHGs.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	*Less Than Significant Impact 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?	[ ]	[ ]	[X]	[ ]

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?	[ ]	[ ]	[X]	[ ]
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	[ ]	[ ]	[X]	[ ]
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?	[ ]	[ ]	[ ]	[X]
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?	[ ]	[ ]	[ ]	[X]
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	[ ]	[ ]	[X]	[ ]
g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	[ ]	[ ]	[X]	[ ]

Discussion

Regulations governing the use, management, handling, transportation and disposal of hazardous materials and waste are administered by federal, state, and local governmental agencies. Federal

regulations governing hazardous materials and waste include the Resource Conservation and Recovery Act of 1976; the Comprehensive Environmental Response, Compensation, and Liability Act of 1980; and the Superfund Amendments and Reauthorization Act of 1986.

The California Department of Toxic Substances Control (DTSC) EnviroStor database (DTSC 2024) is a data management system for tracking DTSC cleanup, permitting, enforcement and investigation efforts at hazardous waste facilities and sites with known contamination or sites where there may be reasons to investigate further. The SWRCB maintains the GeoTracker system for sites that impact or have the potential to impact water quality in California (SWRCB 2025). This includes leaking underground storage tank sites, Department of Defense Sites, and Cleanup Program Sites.

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

Typical hazardous materials that may be used during construction and routine O&M activities include gasoline, diesel fuel, oil, solvents, explosives, and lubricants. The use of these materials for their intended purpose would not pose a significant risk to the public or environment. Wastes, both hazardous and non-hazardous, accumulated during construction activities would be handled, documented, and disposed of in accordance with federal, state, and local laws and regulations.

As specified in *Section 2.6 EMWD Standard Construction Practices*, EMWD would comply with all applicable federal state, and local regulations pertaining to hazardous materials (Federal Code Title 40 and 49; Occupational Safety and Health Administration 29 Code of Federal Regulations 1910; CCR section 5001, 5401, 5701, 5194, and 25507; California Health and Safety Code Division 20, Chapter 6.5, Article 6.5, Article 6.6, and Article 13; and Riverside County ordinance 651.5). The contractor would be required to comply with EMWD Detailed Provisions Section 02201 – Construction Methods & Earthwork of the Standard Detailed Provisions for Flammable or Toxic Materials to prevent spontaneous combustion or dispersion. Conformance with the above regulations would require implementation of a SWPPP to address the discharge of contaminants (including construction-related hazardous materials) through appropriate BMPs. While specific BMPs would be determined during the SWPPP process based on site-specific characteristics (equipment types, etc.), they would include standard industry measures and guidelines contained in the NPDES Construction General Permit text. Conformance with federal hazardous materials transportation law (49 U.S.C. 5101 et seq.) and California Health and Safety Code Division 20, Chapter 6.5, Article 6.5 would require precautionary measures be taken during the routine transport of hazardous materials, such as testing and preparation of a transportation safety plan. According to California Health and Safety Code Division 20, Chapter 6.5, Article 13, used oil that may be produced from construction or operation of the Project would be recycled.

EMWD and its contractors would be required to adhere to EMWD's General Safety Requirements for Hazardous Materials and Hazardous Waste (Specification 1.15 of Section 01000-7) as noted in *Section 2.6 Standard Construction Practices*. These requirements address proper communication

of hazardous substances on a project site, proper storage and disposal of hazardous substances on the site, and clean-up of any spills in accordance with manufacturer, CalEPA, and/or U.S. EPA requirements.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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?

The Project has the potential to expose the public and environment to hazards associated with on-site releases of hazardous materials including gasoline, diesel fuel, oil, solvents, and lubricants during construction. The Project vicinity is adjacent to two residential communities, Autumn Creek Development and Salt Creek and Mountain Sky Development. Although these potentially hazardous materials may be present on site during construction, EMWD will comply with all existing federal, state and local safety regulations governing the transportation, use, handling, storage, and disposal of potentially hazardous materials as explained under response "a" above, as well as EMWD general safety requirements and construction specifications noted in *Section 2.6 EMWD Standard Construction Practices*.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

The closest existing school is Winchester Elementary School (28751 Winchester Road), which is approximately 0.40 miles away from the Project area. The closest proposed school site is located at the northeast corner of Olive Avenue and Beeler Road, which is 0.14 miles away from the Project area (DTSC 2025.).

There is a risk of accidental release of hazardous materials or toxic air pollutants during construction of the Project. As explained under responses "a" and "b" above, EMWD would comply with all applicable federal state, and local regulations pertaining to hazardous materials. In addition, the Project's estimated maximum daily construction emissions of particulate matter and

other air pollutants would not exceed SCAQMD regional threshold as explained in *Section 3.3 Air Quality*.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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?

Regulatory records were searched through the SWRCB GeoTracker database (SWRCB 2025) and the DTSC EnviroStor database (DTSC 2025). These databases provide information on potential, confirmed, and closed hazardous waste and substances sites in California. The Project does not fall within a site that is included on a list of recent or currently active clean-up or hazardous materials sites per Government Code Section 65962.5 (SWRCB 2025; DTSC 2025).

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

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?

The Project is not located within the boundaries of an airport land use plan or located within two miles of a public airport or public use airport (County of Riverside Airport Land Use Commission n.d.).

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

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

The County of Riverside Emergency Operations Plan (EOP) (County of Riverside 2024) serves as the foundation for response and recovery operations for the County of Riverside, as it establishes roles and responsibilities, assigns tasks, and specifies policies and general procedures. The County of Riverside Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) (County of Riverside 2023) aims to reduce the impact of a disaster by identifying hazards and developing ways to decrease their impact. The purpose of the LHMP is to identify the County's hazards, review and assess past disaster occurrences, estimate the probability of future occurrences, and set goals to mitigate potential risks to reduce or eliminate long-term risk to people and property from natural and human-caused hazards.

The Project may temporarily require partial road closures such that construction activities may conflict with the adopted emergency response plan. The Project would temporarily require partial road closures such that construction activities may conflict with the adopted emergency response plan and/or emergency evacuation plan. Implementation of EMWD Standard Construction Practices *(*see *Section 2.6 EMWD Standard Construction Practices*), which includes a Traffic Control and Detour Plan, would ensure that any temporary impacts to emergency vehicle flow and/or ingress/egress to properties near the limits of work are coordinated in advance with emergency service providers and law enforcement to ensure that provision of sufficient emergency service, access, and evacuation can occur during construction if necessary. Activities required during long-term O&M of the Project would be incorporated into EMWD's existing O&M routine and would not be expected to affect emergency response. Implementation of the Traffic Control and Detour Plan (see *Section 2.6 EMWD Standard Construction Practices*) would reduce impacts to local emergency service providers and would avoid potential interference with an adopted emergency response plan or emergency evacuation plan during Project construction.

Mitigation Measures

None required.

Significance Determination

Less than significant impact.

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

The California Public Resources Code 4201-4204 directs the California Department of Forestry and Fire Protection (Cal Fire) to map fire hazard within State Responsibility Areas based on fuel loading, slope, fire weather, and other relevant factors present, including areas where winds have been identified by Cal Fire as a major cause of wildfire spread. These zones, referred to as fire hazard severity zones (FHSZ), classify a wildland zone as moderate, high, or very high fire hazard based

on the average hazard across the area included in the zone. The Project is within a State Local Responsibility Area and Local Responsibility Area (see **Figure 3-5**).

The Project is within areas identified as moderate FHSZ (Cal Fire 2025). The Project would involve the use of construction equipment that could spark a fire in grassland areas designated as a moderate FHSZ. Implementation of EMWD's standard fire safety prevention measures (as noted in *Section 2.6 EMWD Standard Construction Practices*) would ensure the Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	*Less Than Significant Impact 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?	[ ]	[X]	[ ]	[ ]
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	[ ]	[ ]	[X]	[ ]
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;	[ ]	[ ]	[X]	[ ]
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	[ ]	[ ]	[X]	[ ]
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	[ ]	[ ]	[X]	[ ]
iv) impede or redirect flood flows?	[ ]	[ ]	[X]	[ ]
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?	[ ]	[ ]	[X]	[ ]
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	[ ]	[ ]	[X]	[ ]

Discussion

Surface Water

The Project is located in the Santa Ana River Basin, which includes portions of San Bernardino, Riverside, and Orange counties. The Santa Ana Regional Water Quality Control Board (RWQCB) prepares and maintains the Water Quality Control Plan for the Santa River Basin (Basin Plan). The Basin Plan sets water quality standards in the Santa Ana River Basin by establishing beneficial uses for specific water bodies and designating numerical and narrative water quality objectives.

The SWRCB also maintains the 303(d) List of Impaired Water Bodies, which identifies water bodies where water quality indicators exceed acceptable thresholds. If a waterbody is placed on the 303(d) list as impaired for one or more pollutants, it will be identified as "listed". There are no water bodies within the Project area that are included in the 303(d) List of Impaired Water Bodies (SWRCB 2024).

The United States Department of Homeland Security Federal Emergency Management Agency (FEMA) identifies flood hazard areas on Flood Insurance Rate Maps prepared for the National Flood Insurance Program. These areas, known as Special Flood Hazard Areas, are defined as areas where there is a one percent chance of flooding in any given year (also referred to as a 100-year flood) and areas where there is a 0.2 percent chance of flooding in a given year (also referred to as a 500-year flood). Areas outside the 100-year and 500-year flood zones are considered areas of minimal flood hazard.

Groundwater

The Sustainable Groundwater Management Act (SGMA) was adopted in 2014 and established a statewide framework to help protect groundwater resources. Under SGMA, groundwater basins ranked as medium- or high-priority are required to develop groundwater sustainability plans (GSPs) or submit an alternative to a GSP that demonstrates how water managers have already achieved or will achieve sustainable groundwater management.

The Project area is located within the San Jacinto Groundwater Basin (California Department of Water Resources [DWR] Basin Number 8-005). The Basin generally encompasses the areas of Moreno Valley, Perris, Hemet, San Jacinto, Sun City, and Menifee, and has an estimated storage capacity of roughly three million acre-feet (DWR 2006). The San Jacinto Groundwater Basin is designated by DWR as a high priority basin and is subject to the provisions of SGMA (DWR 2019). The eastern portion of the Basin, referred to as the Hemet-San Jacinto Watermaster Management Area, is adjudicated. The western portion of the Basin, referred to as the West San Jacinto Groundwater Management Area, is the source of groundwater production for EMWD and several other water purveyors. EMWD acts as the Groundwater Sustainability Agency for the West San Jacinto Groundwater Management Area. The Project area overlies the West San Jacinto Groundwater Area (EMWD 2021). The San Jacinto Groundwater Basin Groundwater Sustainability Plan was approved by DWR in 2023 and documents basin conditions and ongoing basin management practices to maintain sustainability (EMWD n.d.a).

The Santa Ana RWQCB designates beneficial uses for the San Jacinto Groundwater Basin, including the Perris South Groundwater Management Zone. Existing or potential beneficial uses include municipal and domestic supply and agricultural supply (Santa Ana RWQCB 2019).

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

Potential water quality impacts associated with implementation of the Project would be limited to short-term erosion/sedimentation that would occur during construction. Construction activities that primarily result in sediment releases are related to exposing previously stabilized soils to potential mobilization by rainfall/runoff and wind. Such activities have the potential to degrade surface or groundwater quality and include grading, excavation, and temporary stockpiling of soil.

Construction of the Project would disturb a total area greater than one acre in size and would therefore be required to obtain coverage under the SWRCB's NPDES Stormwater Construction General Permit during Project construction. As part of the permit conditions, and consistent with EMWD Standard Construction Practices (see *Section 2.6 EMWD Standard Construction Practices*), EMWD would be required to prepare a SWPPP and implement BMPs during construction to control sediment and other construction-related pollutants in stormwater discharges. Typical BMPs include housekeeping practices such as proper waste disposal, covering stockpiles with tarps, containment of building materials, and inspection of construction vehicles to prevent leaks or spills. Contractors would be required to comply with the Construction General Permit throughout construction. Should dewatering be required, it would be either discharged to land or back into Salt Creek in accordance with RWQCB Waste Discharge Requirements for construction dewatering, or discharged to the EMWD sewer system.

Under the HDD trenchless option, there is the potential to impact the water quality of Salt Creek if the bentonite drilling fluid used in the HDD process were to accidentally leak (i.e., "frac-out") or otherwise run off into the streambed. Bentonite (dehydrated clay) is a naturally occurring, non-toxic, inert substance used in drilling potable water wells. If bentonite is accidently released into the streambed, it could result in a temporary, local increase in turbidity until the drilling fluid dissipates. Operation of the Project would consist of distributing water through the proposed pipeline to EMWD's potable water system and distributing recycled water through the proposed recycled water pipeline to EMWD's recycled water system. No adverse impacts on surface water and groundwater quality would occur from operation of the Project.

Mitigation Measures

Mitigation Measure HYD-1 Contingency Plan for Inadvertent Release of Non-Hazardous Drilling Fluid: If the HDD method of trenchless crossing of Salt Creek is determined to be required, EMWD will require its construction contractor to prepare a Contingency Plan for Inadvertent Release of Non-Hazardous Drilling Fluid prior to construction. At a minimum, the Plan will prescribe the following measures to ensure protection of water quality:

- Verify drilling fluid mix and recommended depth of the pipeline under the streambed based on soil properties and risk for potential frac-out during HDD operation,
- Procedures to prevent the potential for frac-out associated with HDD,
- Procedures for timely detection of frac-outs,
- Procedures for timely response and remediation in the event of a frac-out, and
- Monitoring of drilling and frac-out response activities.

Significance Determination

Less than significant with mitigation incorporated.

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

Construction of the Project does not involve the extraction, recharge, or use of groundwater. As discussed in the *Section 2 Project Description*, the Project would provide reliability and redundancy to deliver potable water and recycled water to planned growth to minimize service interruptions, as well as promote public safety through the delivery of sufficient pressure and availability of water to support fire suppression services. As discussed in *Section 3.14 Population and Housing*, the Project would serve existing demand and planned future growth and would not induce population growth or increase water demands. Therefore, the Project would not decrease groundwater supplies or interfere with groundwater recharge efforts.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

c.i) Substantially alter the existing drainage pattern of the site 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: result in substantial erosion or siltation on- or off-site?

A portion of the proposed pipeline would be constructed under Salt Creek via HDD or microtunneling and would not change existing drainage patterns. The Project would be constructed within existing streets, vacant land, and dirt pathways, which would be restored to pre-construction activities, and thus would not permanently increase total impervious surface area. Project construction may result in disturbance or exposure of soil that could be subject to erosion and sedimentation during a rain event. However, implementation of the SWPPP and associated BMPs as required by NPDES Construction General Permit would limit erosion and sedimentation.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

c.ii) Substantially alter the existing drainage pattern of the site 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: substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

As shown in **Figure 3-3**, portions of the Project overlie a FEMA designated 1% Annual Chance Flood Hazard Zone by the FEMA National Flood Hazard Layer (FEMA n.d.). However, the Project would not result in new impervious surfaces because surface conditions would be restored to pre-Project conditions. Thus, the rate or amount of surface runoff would not increase as a result of the Project. The Project would not alter the existing drainage pattern of the site area in a manner that would result in flooding on- or off-site.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

c.iii) Substantially alter the existing drainage pattern of the site 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: create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

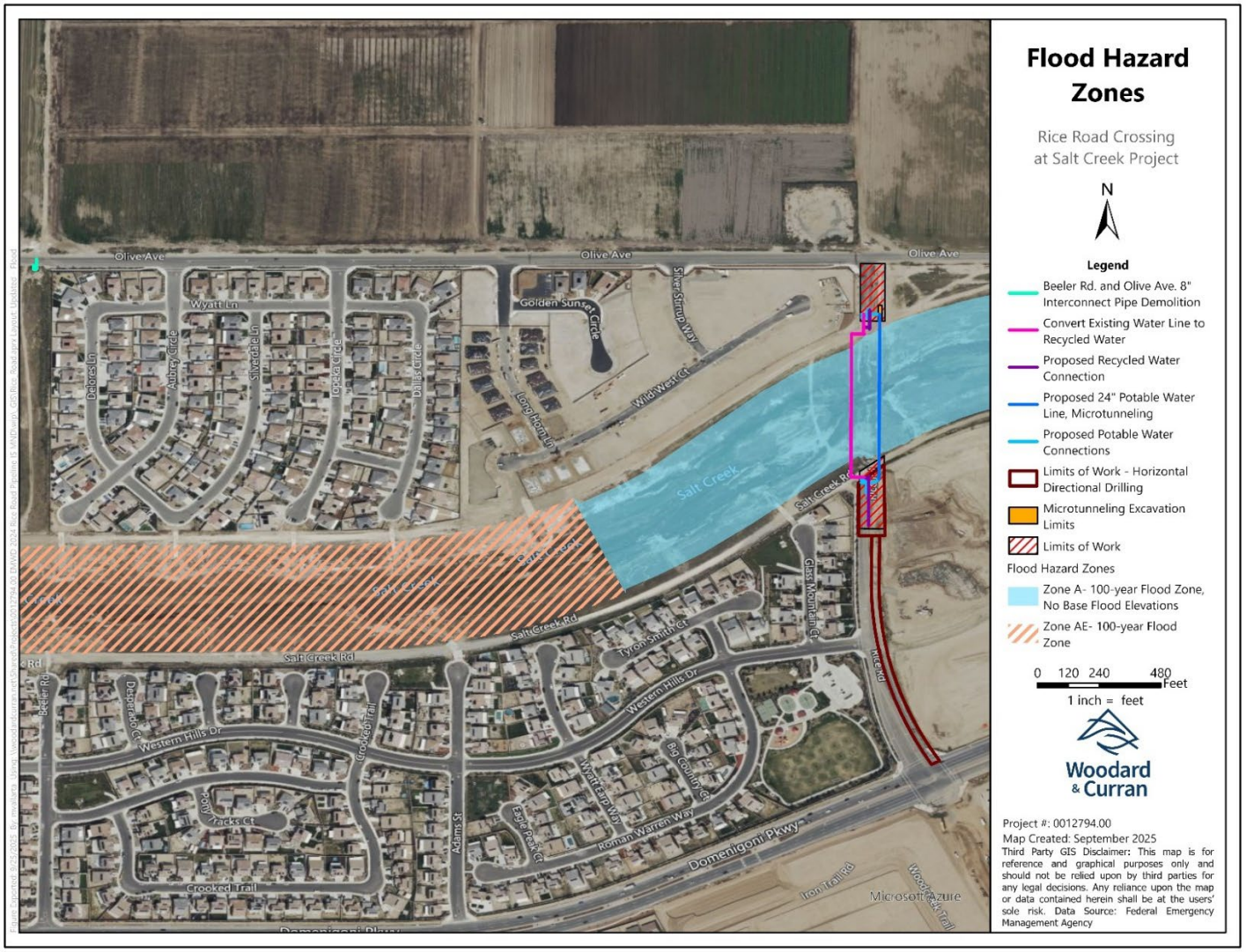
As discussed in "c.i" and "c.ii", above, the Project would not increase surface runoff or alter the existing drainage patterns within the Project area in a manner which would create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. In addition, all construction activities would be conducted in accordance with BMPs specified in the construction SWPPP to reduce impacts of pollutants in storm water discharges. *Mitigation Measures*

None required or recommended.

Significance Determination

Less than significant impact.

Figure 3-3: Flood Hazard



c.iv) Substantially alter the existing drainage pattern of the site 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: impede or redirect flood flows?

As discussed in "c.i", "c.ii", and "c.iii", above, the Project would not increase surface flows or alter the course of an existing stream or river. Although portions of the Project are in a 1% Annual Chance Flood Hazard zone, the Project is not expected to result in new impervious surfaces because construction of the pipelines would be underground and all surfaces would be restored to pre-construction conditions. As a result, the Project would not alter the existing drainage pattern of the site area in a manner that impedes or redirect flood flows.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant.

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

A tsunami is a large ocean wave, caused by earthquakes or major ground movement. The Project Area is not located within a tsunami hazard zone (CDOC n.d.b). A seiche is a large wave generated in an enclosed body of water such as a lake, which is also typically caused by an earthquake. The nearest enclosed body of water is Diamond Valley Lake, which is approximately 2 miles southeast of the Project. Diamond Valley Lake is a reservoir owned and operated by the Metropolitan Water District (MWD). Diamond Valley Lake may have the potential for seismically induced seiche. Additionally, the Project area is in the inundation zone of Diamond Valley Lake (MWD 2017). However, Diamond Valley Lake received a satisfactory condition assessment from the DWR Division of Safety of Dams (DWR 2022). A rating of "satisfactory" states that no existing or potential dam safety deficiencies are recognized (DWR 2022), confirming the structural integrity of Diamond Valley Lake and indicating low risk of inundation. As mentioned under "c.iv", portions of the Project are in a 1% Annual Chance Flood Hazard Zone. The Project is not expected to result in new impervious surfaces because construction of the pipelines would be underground and all surfaces would be restored to pre-construction conditions. Additionally, the Project would adhere to EMWD Standard Construction Practices, which would ensure safe handling, transport, and storage of hazardous materials as well as prevention of building material pollutants in storm water runoff through implementation of a SWPPP. Therefore, the Project site is unlikely to become inundated and the potential for release of pollutants is low.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

As noted previously, the Basin Plan sets water quality objectives for the Project area. The water quality objectives are intended to reduce pollutant discharge and ensure that water bodies are of sufficient quality to meet their designated beneficial uses. The Project would not conflict with water quality standards outlined in the Basin Plan or worsen water quality conditions in any 303(d)-listed water body. As discussed above, pollutant discharge during construction would be avoided via compliance with the Construction General Permit and SWPPP, and RWQCB permits for construction dewatering if needed. Once operational, the Project would convey potable and recycled water for use in EMWD's service area. Recycled water would be applied consistent with approved uses and meet appropriate recycled water quality standards, preventing potential impacts from recycled water use on downstream water bodies. The Project would not discharge extracted or treated water or be a source of pollutants in downstream water bodies. Therefore, the Project would not conflict with the Basin Plan.

The Project area is located within the West San Jacinto Groundwater Management Area of the San Jacinto Groundwater Basin, which is being managed for groundwater sustainability under the San Jacinto Groundwater Basin Groundwater Sustainability Plan. The Project is not expected to have any adverse impacts on groundwater sustainability. The purpose of the Project is to provide reliability and redundancy to EMWD's water conveyance system. The Project does not involve the extraction of groundwater nor would it result in any increase in impervious surfaces that could affect groundwater recharge, and thus, the Project would not impact groundwater sustainability. The Project does not involve application of recycled water that would affect the quality of downstream water bodies. Therefore, the Project would not conflict with applicable water quality control plans or groundwater management plans.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

3.11 Land Use and Planning

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

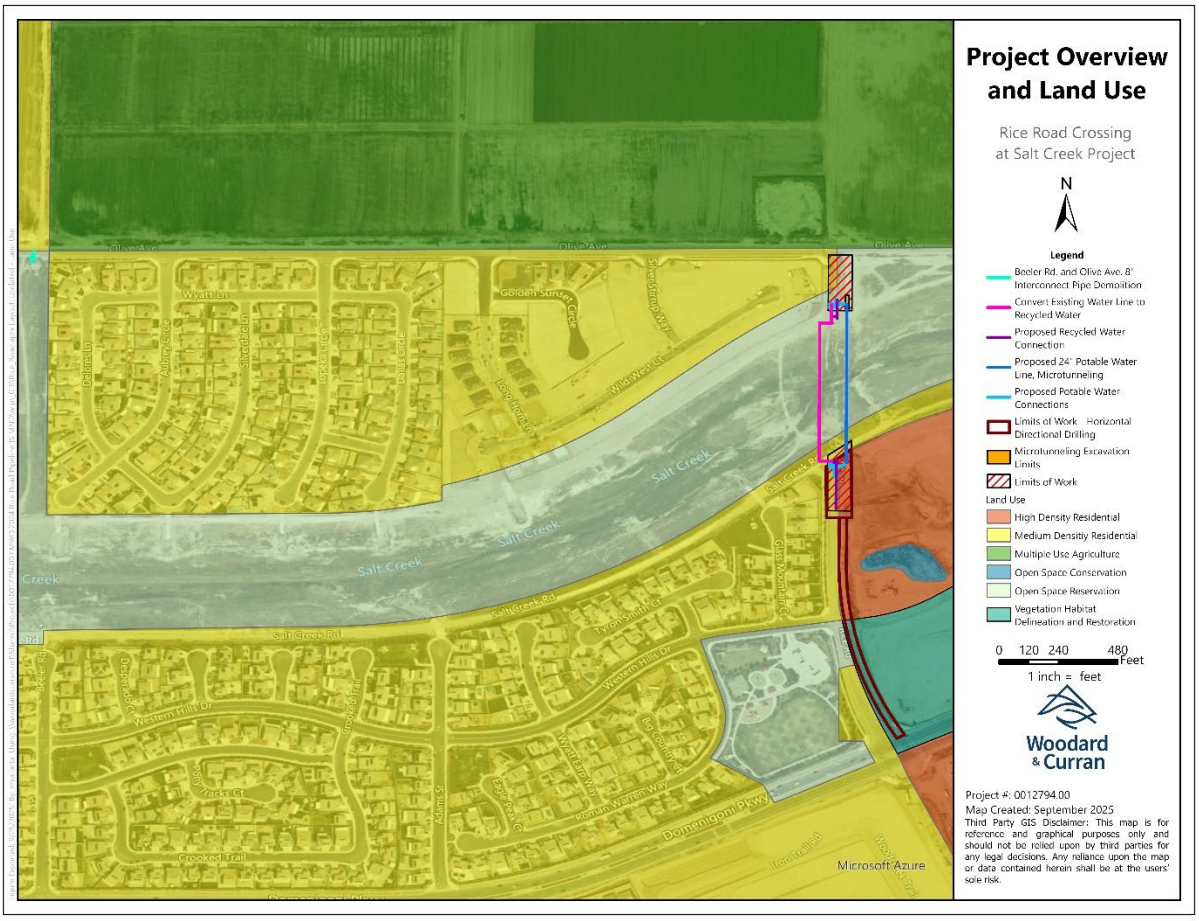
Discussion

The Project is located in unincorporated Riverside County. Land use in the area is governed by designations established by the Riverside County General Plan, that outline acceptable uses. The land use designations surrounding the Project area include residential, mixed use, and open space (County of Riverside 2021b) (**Figure 3-4**).

Land surrounding Rice Road includes developed single-family residential and undeveloped open space. Current development south of Salt Creek includes utilities, walls, and residential structures near the Project area. Development south of Salt Creek and east of Rice Road is ongoing. Existing development north of Salt Creek includes utilities, retaining walls, and residential structures on the west side of Rice Road, south of Olive Avenue. Land surrounding the intersection of Olive Avenue and Beeler Road is disturbed, yet undeveloped.

Most of the Project pipelines would be constructed within existing roadway rights-of-way. A temporary staging area would be within RCFC&WCD land designated PQP under the Western Riverside County Regional Conservation Authority's MSHCP. If RCFC&WCD does not permit the contractor to use the PQP as a staging area, the contractor would use the existing Rice Road right-of-way for temporary equipment storage/staging prior to and during construction. This staging area would be compliant with EMWD Standard Construction Practices (see *Section 2.6 EMWD Standard Construction Practices*).

Figure 3-4: Land Use



Source: Riverside County Planning Department. 2023. General Plan Land Use GIS Layer. September 6.

a) Physically divide an established community?

Construction of the Project would temporarily affect adjacent established communities through increased short-term vehicle trip lengths, dust, noise, and traffic during construction. The temporary construction staging areas would be located either on land that is vacant or within the existing public rights-of-way. Any temporary lane or road closures would be addressed in a Traffic Control and Detour Plan (see *Section 2.6 EMWD Standard Construction Practices*). However, this temporary impact would not physically divide established communities. Furthermore, temporary effects from construction activities would not permanently affect the existing surrounding established communities. The Project pipelines would be located below ground, and disturbed areas would be restored to pre-construction conditions. Therefore, the Project would not physically divide an established community.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

Construction of the Project would occur within existing public rights-of-way, and staging areas would be either located on land designated PQP under the MSHCP or within the existing Rice Road right-of-way. Upon completion of construction, all disturbed surfaces would be restored to pre-construction conditions. The Project pipelines would be installed below ground and would not result in permanent land use changes.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

3.12 Mineral Resources

	Potentially Significant Impact	*Less Than Significant Impact 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?	[ ]	[ ]	[ ]	[X]
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?	[ ]	[ ]	[ ]	[X]

Discussion

The Surface Mining and Reclamation Act of 1975 mandates a process for classification and designation of lands containing potentially important mineral deposits. Classification is carried out by the California Geological Survey (CGS) State Geologist and designation is a function of the CGS State Mining and Geology Board. The relative importance of potential mineral resource sites is indicated through classification into Mineral Resource Zones (MRZs). These MRZs are based on geological appraisals which include the use of literature, geological maps, and publications and data from the CDOC Division of Mines and Geology, US Geological Survey, the former US Bureau of Mines, and the US Bureau of Land Management. Classification also includes site investigations that determine the chemical and physical components of the area. An area can be classified as:

MRZ 1: No mineral resources;

MRZ 2: Significant resource area (quality and quantity known);

MRZ 3: Significant resource area (quality and quantity unknown);

MRZ 4: No information (applies primarily to high-value ores).

The Project is located within Winchester, which is an unincorporated community of Riverside County. The Project area is designated residential, mixed-use, and open space. There are no operating quarries for any mineral resources within the Project area.

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

The Project area is not within any MRZs (CDOC 2008). The Project area is not currently used as a mineral resource recovery site and the Project would not involve mining or the production of mineral resources.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

3.13 Noise

	Potentially Significant Impact	*Less Than Significant Impact 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?	[ ]	[X]	[ ]	[ ]
b) Generation of excessive groundborne vibration or groundborne noise levels?	[ ]	[X]	[ ]	[ ]
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?	[ ]	[ ]	[ ]	[X]

Discussion

Noise is generally defined as unwanted sound. Noise can cause hearing impairment for humans, and may also disrupt everyday activities such as sleep, speech, and activities requiring concentration. Noise can also interfere with the activities of wildlife, especially nesting birds. Noise-sensitive land uses are generally those where excess noise would disrupt how humans and/or wildlife use the land. The Noise Element of the Riverside County General Plan designates land uses such as schools, hospitals, rest homes, long term care facilities, mental care facilities, residential uses, places of worship, libraries, and passive recreation areas to be considered noise-sensitive (County of Riverside 2015b). Noise may be generated by mobile (i.e., line) sources (for example, cars, trains, and aircraft) or stationary (i.e., point) sources (e.g., machinery, airports, and construction sites).

This analysis uses the following noise metrics adapted from the County of Riverside General Plan Noise Element (County of Riverside 2015b), the Federal Highway Administration Construction Noise Handbook (FHWA 2006) and the Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual (FTA 2018).

- A decibel (dB) is a unit for measuring the relative amplitude of a sound equal to the smallest difference normally detectable by the human ear, the range of which includes approximately one hundred thirty (130) decibels on a scale beginning with zero decibels for the faintest detectable sound.
- A-weighting (dBA) means the standard A-weighted frequency response of a sound level meter, which de-emphasizes low and high frequencies of sound in a manner similar to the human ear for moderate sounds.
- Community Noise Equivalent Level (CNEL) is the average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7pm to 10pm and after the addition of 10 decibels to sound levels in the night from 10pm to 7am.
- Day-Night Average Level (Ldn) is the average equivalent A-weighted sound level during a 24-hour day, obtained after addition of 10 decibels to sound levels in the night from 10pm to 7am. CNEL and Ldn both represent daily levels of noise exposure averaged on an annual or daily basis.
- L_{10} is the A-weighted sound level exceeding 10% of the sample time. Similarly, L_{50}, L_{90}, etc.
- Maximum Sound Level (L_{max}) is the maximum level describes the maximum noise level reached during a single noise event. For transit noise impact assessments, it is appropriate to consider the A-weighted maximum level (L_{max}) to understand the full context of the scenario. It is not appropriate to use this metric for transit noise impact assessments. This metric is commonly used in vehicle noise specifications and commonly measured for individual vehicles.

Groundborne vibration can occur when heavy equipment or vehicles create vibrations in the ground, which can then propagate through the ground to buildings, creating a low-frequency sound. Groundborne vibration can be described by both its amplitude and frequency. Amplitude may be characterized by particle velocity, which is measured in inches or millimeters per second. Vibration can be felt outdoors, but the perceived intensity of vibration impacts is much greater indoors, due to the shaking of the structure. Groundborne vibrations can be a source of annoyance to humans due to a "rumbling" effect, and such vibrations may also cause damage to buildings. Groundborne vibration is discussed in terms of these impacts on humans and structures. The annoyance potential of groundborne noise is typically characterized using the A-weighted sound level. Common sources of vibration come from trains, transit vehicles, construction equipment, airplanes, and large vehicles. Land uses sensitive to vibration will have a lower vibration threshold.

This analysis uses the following vibration metrics adapted from the Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual (FTA 2018).

Peak Particle Velocity (PPV) is the peak signal value of an oscillating vibration velocity waveform. Usually expressed in inches/second.

Root Mean Square (rms) is the square root of the arithmetic average of the squared amplitude of the signal.

Vibration Decibels (VdB) is the vibration velocity level in decibel scale.

Noise Standards

EMWD, as a public agency, is not subject to other jurisdictional agencies' established noise standards. Likewise, as a public agency, EMWD is not subject to County ordinances and would not be required to obtain variances. EMWD has not established an applicable noise standard of its own for permanent or temporary ambient noise levels; however, EMWD follows a "good neighbor" approach to adhering to local noise standards. Thus, the County of Riverside noise standards are used for the purpose of evaluating the significance of the Project's noise levels in this CEQA analysis.

The Riverside County General Plan Noise Element (County of Riverside 2015b) provides a systematic approach to identifying and appraising noise problems in the community; quantifying existing and projected noise levels; addressing excessive noise exposure; and community planning for the regulation of noise. The element includes policies, standards, criteria, programs, diagrams, a reference to action items, and maps related to protecting public health and welfare from noise (**Table 3-8**)**.**

Riverside County Ordinance No. 847 Regulating Noise establishes countywide standards regulating noise and regulates noise in order to protect the health, safety, and general welfare of Riverside County residents. According to Ordinance 847, sound emanating from capital improvement projects of a government agency are exempt from the provisions of the ordinance. Therefore, the sound levels set in the County of Riverside Noise Ordinance would not apply to the Project. However, sound levels can be used to understand acceptable sound levels in the region. The ordinance establishes general sound level standards by land use type. The Project area is adjacent to residential land use. For the residential land use designation, the ordinance stipulates that no person shall create any sound, or allow the creation of any sound, on any property that causes the exterior sound level on any other occupied property to exceed the sound level standard shown in **Table 3-9**.

OSHA's noise standard 1910.95(b) establishes noise exposure thresholds for employees. Instantaneous noise can reach as high as 140 dB peak sound pressure level before administrative or engineering controls must be utilized.

Table 3-8: County of Riverside Land Use Compatibility for Community Noise Exposure

Land Use Category	Range of "Normally Acceptable" Community Noise Exposure Level (L_{dn} or CNEL, dBA)					
	55	60	65	70	75	80
Residential-low density single family, duplex, mobile homes						
Residential-multiple family						
Transient lodging-motels, hotels						
Schools, libraries, churches, hospitals, nursing homes						
Playgrounds, neighborhood parks						
Golf courses, riding stables, water recreation, cemeteries						
Office buildings, businesses, commercial, and professional						
Industrial, manufacturing, utilities, agriculture						

Source: County of Riverside 2015

Table 3-9: County of Riverside Sound Level Standards

General Plan Land Use Designation of Project area	Maximum Decibel Level (dB L_{MAX})	
	7am – 10pm	10pm – 7am
Residential (1/2 Acre – 20+ Density)	55	45

Source: County of Riverside 2007

a) Generation of 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?

Construction

Construction of the Project has the potential to expose people to increased noise levels resulting from the use of equipment and vehicles. Single-family residences are the primary noise-sensitive receptors adjacent to, and in the vicinity of, the Project.

Construction of the Project is expected to last approximately six months and construction activities would include microtunneling or HDD, use of an excavator and pavement breaker, saw cutting of pavement, trench excavation, trench backfill and compaction, and site restoration/pavement replacement. Noise-generating equipment used during pipeline construction is listed in **Table 2-1** in *Section 2.4.1 Pipeline Construction*. Pipeline construction noise levels would fluctuate depending

on the construction phase, equipment type, duration of use, distance between noise source and receptor, and presence or absence of existing barriers between noise source and receptor. The typical noise level of each piece of equipment included in *Section 2.4.1 Pipeline Construction* is listed in **Table 3-10**.

Table 3-10: Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level 50ft from Source, dBA
Tractor/Loader/Backhoe	80
Concrete Saw	90
Pile Driver	95
Crane	85
Concrete Mixer Truck	79
Excavator	85
Microtunneling Machine	84[1]
Welder	73
Air Compressor	80
Pump	77
Pick-Up Truck	55
Dump Truck	84
Pavement Breaker	85[2]
Sweeper	80
Off-Highway Truck (Utility Truck, Water Truck)	84[3]
Paver	85
Generators	82
Drill Rig/ HDD drill rig	84
Excavator	85

Sources: FHWA 2006

Notes:

1. Noise level was assumed to be comparable to "drill rig truck"
2. Noise level was assumed to be comparable to "jackhammer"
3. Noise level was assumed to be comparable to "dump truck"

Residences adjacent to the Project area, west of Rice Road north and south of Salt Creek, have the potential to be exposed to construction generated noise. Construction may occur as close as 45 feet from the nearest residential property line and about 70 feet from the nearest residential building. Project construction equipment has the potential to generate noise levels between 70 and 90 dBA at the residential receptors, although noise levels would be reduced by the existing masonry sound walls that separate the residential property lines from Rice Road. Sound walls have the potential to reduce sound levels by 5 to 15 dBA, depending on barrier height, length, and distance from both source and receptor (FTA 2018). Although the Project is exempt from County

of Riverside noise standards, and construction activities would occur during daytime hours, consistent with the limits on private construction activities in the noise ordinances, given the close proximity between Project construction and residential noise receptors, EMWD would require the Project contractor to implement **Mitigation Measure NOI-1** to further reduce the potential for exposure of residential receptors to construction noise.

Operation

Once operational, the below-ground potable and recycled pipelines would not generate noise. Noise may be associated with occasional vehicle maintenance trips, but these trips would be infrequent, and the resulting noise would be consistent with existing ambient noises because the pipelines would be within roadways.

Mitigation Measures

NOI-1: Construction Noise Reduction Measures

EMWD shall require its contractor to implement the following actions relative to construction noise:

- EMWD shall conduct construction activities Monday through Friday between the hours of 7:00 AM and 7:00 PM.
- Stationary noise-generating equipment shall be located as far from sensitive receptors as possible. Such equipment shall also be oriented to minimize noise that would be directed toward sensitive receptors. Unless it conflicts with other specifications of this MND, non-noise generating equipment (e.g., roll-off dumpsters, baker tanks) shall be positioned between the noise source and sensitive receptors.
- Equipment and staging areas shall be located as far from sensitive receptors as possible. At the staging location, equipment and materials shall be kept as far from adjacent sensitive receptors as possible.
- Construction vehicles and equipment shall be maintained in the best possible working order; operated by an experienced, trained operator; and shall utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds).
- Unnecessary idling of internal combustion engines shall be prohibited. In practice, this would require turning off equipment if it would idle for five or more minutes.
- Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.

Significance Determination

Less than significant impact with mitigation incorporated.

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

Construction

Construction of the Project has the potential to expose people to increased levels of groundborne vibration and noise resulting from the use of equipment and vehicles. Single-family residences are the primary sensitive receptors adjacent to, and in the vicinity of the Project area. **Table 3-11** displays the human reaction to typical vibration levels.

Table 3-11: Human Reaction to Typical Vibration Levels

Vibration Level Peak Particle Velocity (inches/second)	Human Reaction
0.0059-0.0188	Threshold of perception, possibility of intrusion
0.0787	Vibrations readily perceptible
0.0984	Continuous vibration begins to annoy people
0.1968	Vibrations annoying to people in buildings
0.3937-0.5905	Vibrations considered unpleasant when continuously subjected and unacceptable by some walking on bridges

Source: County of Riverside 2015

Construction of the Project is expected to last approximately six months and construction activities would include HDD, microtunneling, use of an excavator and pavement breaker, saw cutting of pavement, trench excavation, trench backfill and compaction, and site restoration/pavement replacement. Vibration-generating equipment used during pipeline construction is listed in **Table 2-1** in *Section 2.4.1 Pipeline Construction*. Microtunneling, if used, is expected to occur at a rate of approximately 30 LF per day. Vibratory sheet pile driving is anticipated to install the groundwater dewatering wells. Hard and dense soils are not expected to be encountered during installation of the groundwater dewatering wells; thus, impact hammers are not expected to be needed to install the sheet piles.

The Transit Noise and Vibration Impact Assessment Manual provides average source levels for typical construction equipment that may generate groundborne vibrations. Vibration source levels for construction equipment associated with the Project that is most likely to cause vibration are summarized in **Table 3-12**.

Table 3-12: Vibration Source Levels for Representative Construction Equipment

Equipment	PPV at 25 feet (inches/second)	Approximate VdB at 25 feet
Large Bulldozer	0.089	87

Equipment	PPV at 25 feet (inches/second)	Approximate VdB at 25 feet
Pile Driver (sonic) (upper range)	0.734	105
Pile Driver (sonic) (typical)	0.17	93
Loaded Truck	0.076	86
Jackhammer	0.035	79
Vibratory Roller	0.21	94
Caisson Drilling	0.089	87

Source: FTA 2018

Under use of microtunneling, the Project would involve the use of vibratory sheet pile driving, drilling machines, and other equipment that could potentially generate significant levels of groundborne vibration. Nearby residences have the potential to be impacted by groundborne vibration from pile driving during the installation of the groundwater dewatering well system. Construction activities, including vibratory sheet pile driving and the use of other equipment that is likely to cause vibration, such as bulldozers, trucks, and the microtunneling boring machine, may occur as close as 45 feet from the nearest residential property line and about 70 feet from the nearest residential building.

Groundborne vibrations propagate through the ground and decrease in intensity quickly as they move away from the source(FTA 2018

The nearest residences would be set apart from the limits of work by approximately 45 feet. Groundborne vibration and noise tend to be more perceptible and disruptive during nighttime hours when people are generally indoors and asleep. Use of vibratory pile driving, drilling machines, and other vibration-causing equipment would only occur during daytime hours and would therefore avoid impacts during the night when they would be more likely to be noticed. Once operational, the Project would not produce groundborne vibration or groundborne noise. In addition, use of vibration-causing equipment to install the groundwater dewatering wells, conduct microtunneling, and restore pavement after construction, would be temporary.

Vibratory sheet pile driving, which is assumed to be required for the installation of the groundwater dewatering wells that would be needed for the microtunneling option, would cause the most groundborne vibration of any anticipated piece of equipment for the Project. Pile driving actions may generate vibration noise that would be infrequent, temporary, and short in duration. Vibration and vibration noise would not be damaging or excessive. Groundborne vibration caused by vibratory sheet pile driving would attenuate with distance, thus reducing in intensity before it reached nearby residences. Nonetheless, if pile driving were to occur simultaneously with the use of other construction equipment that is associated with high levels of groundborne vibration, such as the microtunneling boring machine or a bulldozer, Project construction could cause annoyance to people within the residential areas west of Rice Road north and south of Salt Creek.

Mitigation Measure

NOI-2: Construction Vibration Reduction

Under Option 2: Microtunneling, EMWD shall require its contractor to implement the following actions relative to construction vibration and groundborne noise:

- To minimize excessive vibration and vibration noise that could cause annoyance to nearby people, other vibration-generating equipment (e.g., loaded trucks, drill rigs, vibratory rollers, jackhammers) shall not be operated simultaneously in the same place (i.e., within the limits of work on Rice Road north of Salt Creek) as the pile driving equipment when pile driving is underway.

Significance Determination

Less than significant with mitigation incorporated.

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 Project is not located within the vicinity of an airport. The closest airport is the Hemet-Ryan Airport, located west of the City of Hemet. The airport and its runways are located roughly 4 miles from the Project site. The Project site would be outside the 60-CNEL noise contour for the airport (County of Riverside 2017). The Project would not expose residences or workers to excessive aircraft noise.

Mitigation Measure

None required or recommended.

Significance Determination

No impact.

3.14 Population and Housing

	Potentially Significant Impact	*Less Than Significant Impact 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)?	[ ]	[ ]	[ ]	[X]
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	[ ]	[ ]	[ ]	[X]

Discussion

In 2020, EMWD served an estimated retail population of 603,950 through approximately 155,561 single family, multi-family, and other commercial, industrial, institutional, landscape, and irrigation accounts. EMWD's service area is currently 40 percent built out, meaning it is one of the few regions of Southern California anticipating significant population growth in the coming decades (EMWD 2021.b). Demand estimates used in the EMWD 2020 Urban Water Management Plan predict that population will more than double compared to the current size before full build out is reached. By 2045, EMWD's retail service area population is expected to increase to approximately 807,200 (EMWD 2021.b).

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)?

The Project would not directly induce unplanned population growth because no new housing or permanent employment would be constructed as a result of the Project. The Project involves an extension of EMWD's existing potable and recycled water infrastructure within its existing service area, which would serve planned development that is being developed in the Harvest Valley/Winchester planning area (County of Riverside 2021a). The development of the Harvest Valley/Winchester planning area is consistent with the County's zoning, General Plan, and Specific

Plan. The Project would increase EMWD's potable and recycled water distribution system capacity to accommodate planned growth anticipated in EMWD's 2020 Urban Water Management Plan (UWMP) that would occur with or without the Project. Inspection and repair, if necessary, of the Project would be incorporated into EMWD's existing O&M activities; no new staff would be required to serve the Project. Therefore, the Project would not directly or indirectly induce unplanned population growth.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

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

Construction and operation of the Project would occur within roadway rights-of-way. Potential construction staging areas would occur within vacant properties. The Project would not be constructed in a manner that would remove existing housing stock or reduce areas zoned for residential use. Further, the Project would not require temporary removal of residents. Therefore, the Project would not displace existing people or houses or require the construction of replacement housing.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

3.15 Public Services

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
Would the Project:				
a) 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 following public services:	[ ]	[ ]	[ ]	[X]
i) Fire protection?	[ ]	[ ]	[ ]	[X]
ii) Police protection?	[ ]	[ ]	[ ]	[X]
iii) Schools?	[ ]	[ ]	[ ]	[X]
iv) Parks?	[ ]	[ ]	[ ]	[X]
v) Other public facilities?	[ ]	[ ]	[ ]	[X]

Discussion

The Riverside County Fire Department provides fire and emergency services for all unincorporated areas of Riverside County, including the Project area. The Riverside County Fire Department responds to fires, rescues, traffic accidents, medical emergencies, and requests for general public assistance (Riverside County Fire Department, n.d.a; n.d.b). The Riverside County Sheriff's Department provides police protection and crime prevention services for all unincorporated areas of Riverside County, including the Project area (Riverside County Sheriff's Department n.d.). The Project is located within the Hemet Unified School District. The districts operate 16 elementary schools, eight middle schools, and five high schools. (Hemet Unified School District n.d.). The Valley-Wide Recreation and Park District maintains and manages 11 parks and recreational

facilities.

a.i-v) 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 following public services: Fire protection, Police protection, Schools, Parks, or Other public facilities?

The Project would not include construction of new or expanded facilities, nor would it directly or indirectly cause growth or development that would result in the need for additional facilities. The Project would increase EMWD's potable and recycled water system capacities to accommodate planned growth anticipated in the 2020 UWMP and Riverside County General Plan that would occur with or without the Project. The Project itself would not increase population or result in the need for new or expanded public facilities, such as fire protection facilities, police protection facilities, or schools, that are typically associated with population growth. Construction of the Project does not include housing, and operation would not result in new employment or population growth that would result in an influx of students. No new school facilities would need to be built to maintain class size ratios or other performance objectives. The Project would not change existing demand on parks, recreational facilities, libraries, or other government facilities because the Project would not directly or indirectly induce population growth or permanent employment within the area. Construction of the Project would not necessitate expansion of existing or construction of new parks or recreational facilities to maintain existing park acreage standards. As a result, the Project would not substantially increase the need for new government staff or new facilities, nor would it interfere with acceptable service rations, responses times, or other performance objectives.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

3.16 Recreation

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
Would the Project:				
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	[ ]	[ ]	[ ]	[X]
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?	[ ]	[ ]	[ ]	[X]

Discussion

There are no designated regional, state, or multi-use, or trails within the Project area. The nearest designated public trail to the Project is Diamond Valley Lake Loop, which is located approximately 1.75 miles northeast of the Project area. The Project does not cross a proposed or existing Class I, II, or III Bike Lane. The nearest existing bike lane is a Class II Bike Lane approximately one-quarter mile away on Domenigoni Parkway. Class II bike lanes provide a striped lane for one-way bike travel on a street or highway. There is one recreational facility located adjacent to the Project area, Conestoga Park, on the west side of Rice Road between Salt Creek and Domenigoni Parkway, which is accessed via Western Hills Drive. (County of Riverside 2021d).

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

The Project would serve existing and planned development that would occur with or without the Project. The Project does not include residential housing and would not induce permanent employment or unplanned population growth that would permanently increase the use of the parks and recreational facilities. The Project would not increase the use of existing parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

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?

Implementation of the Project would not require construction or expansion of recreational facilities that could have an adverse physical impact on the environment.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

3.17 Transportation

	Potentially Significant Impact	*Less Than Significant Impact 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?	[ ]	[ ]	[X]	[ ]
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	[ ]	[ ]	[X]	[ ]

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	[ ]	[ ]	[X]	[ ]
d) Result in inadequate emergency access?	[ ]	[ ]	[X]	[ ]

Discussion

Major roadways in the Project vicinity are Rice Road, Olive Avenue, California State Route 79/Winchester Road, and Domenigoni Parkway. Bus routes in the area are operated by Riverside Transit Agency. The 74 Hemet-Winchester-Menifee-Sun City bus route includes portions of Winchester Road and Domenigoni Parkway. However, no active routes cross or coincide with the Project area on Rice Road. Additionally, there are no existing bikeways or railroad crossings within the immediate Project area.

Rice Road is a two-lane, north-south local road that is bifurcated by Salt Creek. South of Salt Creek, Rice Road is an improved two-lane north/south paved roadway between Western Hills Drive and the southern bank of Salt Creek where the pavement terminates at the top of the channel embankment. Between Western Hills Drive and Domenigoni Parkway, Rice Road is an improved four-lane north/south paved roadway with turn lanes. The undeveloped Rice Road right-of-way extends north across Salt Creek to a location approximately 100 feet north of the creek where a paved section of Rice Road continues to its termination point at Olive Avenue. Olive Avenue is a two-lane, paved, east-west local road north of Salt Creek. Beeler Road is a one-lane dirt road. California State Route 79/Winchester Road is a two-lane, north-south state highway that is located east of the Project area. Domenigoni Parkway is a major east-west arterial that consists of three lanes of traffic, a center turn lane, and a right-hand turn lane onto Rice Road.

RCTD has future plans to construct a bridge across Salt Creek that may relocate all utilities crossing Salt Creek in cells within the bridge. To construct the proposed bridge, RCTD would widen the existing road right-of-way by 30 feet along the east side of Rice Road. However, only preliminary plans for the bridge exist at this time.

The Circulation Element of the County of Riverside General Plan establishes goals, objectives, and policies for transportation. It also provides information on current and future conditions for streets and highways, public transportation, non-motorized transportation and other transportation needs. Additionally, the Circulation Element establishes standards for the movement of people, goods, and services throughout the planning area (County of Riverside 2020).

On September 3, 2020, the SCAG adopted Connect SoCal, SCAG's 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy. The plan is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health

goals. The plan details how the region will address its transportation and land use challenges and opportunities in order to achieve its regional emissions standards and GHG reduction targets. The Connect SoCal plan represents the vision for Southern California's future, including policies, strategies, and projects for advancing the region's mobility, economy, and sustainability through 2040 (SCAG 2020).

The Safety Element of the County of Riverside General Plan identifies generalized evacuation corridors. Although emergency egress may vary depending on the type and scale of emergencies, prominent emergency evacuation routes listed in the General Plan Safety Element located near the Project area include State Route 79/Winchester Road and Domenigoni Parkway (County of Riverside 2021c).

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

Construction of the Project would have temporary effects on local roadways, including Rice Road and Olive Avenue. Project construction is estimated to last approximately six months and would occur within the Rice Road right-of-way and along the shoulder of Olive Avenue, near the intersection with Beeler Road. Due to pipeline demolition occurring within the shoulder and eastbound land of Olive Avenue, a temporary lane closure may occur, necessitating traffic control measures or alternate routes. If the HDD option is selected, the entire pipe would, ideally, be welded or fused prior to drilling so that the pipe can be pulled through the borehole continuously. The areas that would be required for laying down and welding or fusing pipes may require lane closures on Rice Road between Salt Creek and Domenigoni Parkway. However, demolition and site restoration along Olive Avenue would only last approximately one week, and HDD pipe pull-back would last only one to two weeks. Thus, impacts from lane closures would not occur in the same area over the entire Project construction period, and disturbed areas would be restored to their original condition. Because there are no bikeways within the Project area, there would not be any impediments to bike path or trail access.

Potential construction impacts associated with lane closures would be minimized through the implementation of the Traffic Control and Detour Plan, incorporated into the Project as one of EMWD's Standard Construction Practices (see *Section 2.6 EMWD Standard Construction Practices*). The Traffic Control and Detour Plan would include identification of staging locations, safe ingress and egress points from staking areas, potential road closures, haul routes for construction-related vehicle traffic, safe routes to maintain pedestrian and bicyclist safety during construction, and traffic control measures. It would be reviewed by the County of Riverside and coordinated with emergency service providers. During operation, EMWD staff may be required to implement temporary lane closures to access manholes to conduct maintenance activities. Such activities would be incorporated into EMWD's existing O&M activities, and would be temporary. Therefore, the Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, trails, and bikeway and pedestrian systems.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

CEQA Guidelines Section 15064.3, subdivision (b) outlines criteria for analyzing transportation impacts in terms of vehicle miles traveled (VMT) for land use projects and transportation projects. VMT refers to the amount and distance of automobile travel attributable to a project. According to the California Governor's Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018), the term "automobile" refers to on-road passenger vehicles, specifically cars and light-duty trucks. In the case of the Project, worker trips would be conducted in cars and light-duty trucks. Vendor and hauling trips would be conducted in medium- or heavy-duty trucks and are therefore excluded from the estimation of VMT. Environmental impacts associated with the use of medium- and heavy-duty truck trips are addressed in *Section 3.3 Air Quality*, *Section 3.6 Energy*, and *Section 3.8 Greenhouse Gas Emissions* (OPR 2018).

Construction of the Project would involve temporary worker trips which would occur during the approximately 6-month construction period. Project construction would require approximately 20 one-way worker trips per day (see **Appendix A**). According to OPR Technical Advisory on Evaluating Transportation Impacts in CEQA, projects that generate fewer than 110 trips per day may be assumed to cause a less-than-significant transportation impact (OPR 2018). Therefore, construction of the Project would not result in a considerable increase in VMT. Operation of the Project is expected to require occasional worker trips for inspection and maintenance of the pipelines. These trips would be incorporated into EMWD's existing O&M program and would not increase VMT in the Project area. Based on OPR guidance, the Project would not create a significant impact related to VMT. The Project would be consistent with CEQA Guidelines Section 15064.3, subdivision (b).

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

Project construction could temporarily increase transportation hazards in the Project area because it may require lane closures, incompatible uses (i.e., use of heavy construction equipment), and ingress/egress to temporary staging areas from existing roadways. However, implementation of EMWD Standard Construction Practices (see *Section 2.6 EMWD Standard Construction Practices*), which includes a Traffic Control and Detour Plan, would minimize these hazards by identifying and implementing traffic control and safety measures such as flagging, and establishment of safe routes. No new roadways would be constructed, and existing roadways would be restored to their prior condition once construction is complete. Therefore, after construction, the Project would not create roadway hazards.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

d) Result in inadequate emergency access?

Construction of the Project may require lane closures within the Project area and would generate trips associated with construction (worker travel and delivery of materials and equipment). Lane closures have the potential to hinder access for emergency vehicles. Traffic control measures are included in EMWD's Standard Construction Practices (see *Section 2.6 EMWD Standard Construction Practices*). Traffic control measures implemented during Project construction would require that emergency crews be able to access sites and surrounding areas. The contractor would coordinate the Traffic Control and Detour Plan with EMWD and emergency service providers to ensure that emergency responders are informed of construction locations and construction does not interrupt emergency access. Traffic control measures would also require that the contractor make a reasonable effort to preserve access to properties during construction.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	*Less Than Significant Impact 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:				
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	[ ]	[X]	[ ]	[ ]
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.	[ ]	[X]	[ ]	[ ]

Discussion

A *Cultural Resources Technical Report* was prepared for the proposed Project in October 2025 by Rincon Consultants. The report includes a CHRIS cultural resources records search, an SLF search conducted by the NAHC, a review of historical aerial imagery and topographic maps, pedestrian surveys of the Project site, and geoarchaeological analysis. The report is provided in **Appendix C** and is relied upon for analysis in this MND.

Assembly Bill 52 Tribal Consultation

Assembly Bill (AB) 52 establishes a formal consultation process between the lead agency, EMWD, and all California Native American Tribes within the area regarding tribal cultural resource evaluation. AB 52 mandates that the lead agency must provide formal written notification to the designated contact of traditionally and culturally affiliated California Native American tribes that have previously requested notice. Native American tribes are notified early in the project review phase by written notification that includes a brief description of the proposed project, location, and the lead agency's contact information. The Tribal contact then has 30 days to request project-specific consultation pursuant to this section (Public Resources Code §21080.1).

As a part of the consultation pursuant to Public Resources Code §21080.3.1(b), both parties may suggest mitigation measures (Public Resources Code §21082.3) that can avoid or substantially lessen potential significant impacts to tribal cultural resources or provide alternatives that would avoid significant impacts to a tribal cultural resource. The California Native American tribe may request consultation on mitigation measures, alternatives to the project, or significant effects. The consultation may also include discussion on the environmental review, the significance of tribal cultural resources, the significance of the project's impact on the tribal cultural resources, project alternatives, or the measures planned to preserve or mitigate. Consultation shall end when either: 1) both parties agree on the mitigation measures to avoid or mitigate significant effects on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

a.i) 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: 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).

As discussed in *Section 3.5 Cultural Resources*, a Cultural Resources Technical Report was prepared by Rincon in 2025 (**Appendix C**) and included a search of the CHRIS and SLF and other historical resources. The CHRIS records search and other background research identified 96 previously recorded cultural resources within one mile of the Project area, one historic-period road overlaps the project site and one multi component pre-contact archaeological site P-33-007273 is adjacent to the project site. The SLF returned negative results within one mile of the Project area.

Although there are no known tribal cultural resources within the Project sites, the Project area is considered sensitive based on previous studies, the locations of known historic and prehistoric resources, and consultations with Native American tribes under AB 52 as discussed under *aii*, below.

The historic resource was recommended ineligible for listing as a historical built environmental resource under CEQA. Therefore, the Project does not have the potential to impact historical built environment resources. It is unknown if the pre-contact archaeological site P-33-007273 has been previously evaluated for inclusion in the NRHP/CRHR; the South Coast Information Center site record did not include a status code. The proposed Project would involve ground disturbing activities during construction and there is potential to encounter previously unknown tribal cultural resources.

Mitigation Measures

TRI-1: Tribal Monitoring

Tribal Monitoring Agreement: At least 30 days prior to the start of ground-disturbing activities, EMWD shall contact the Consulting Tribe to develop a Cultural Resources Treatment Monitoring Agreement (Agreement). The Agreement shall address the treatment of archaeological resources inadvertently discovered on the project site; project grading; ground disturbance and development scheduling; the designation, responsibilities, and participation of tribal monitor(s) during grading, excavation, and ground-disturbing activities; and compensation for the tribal monitors, including overtime, weekend rates, and mileage reimbursement.

Tribal Monitoring: A tribal monitor shall be present for ground-disturbing activities associated with the project. At least seven business days prior to ground-disturbing activities, District shall notify the Tribe(s) of the grading/excavation and monitoring program/schedule, to coordinate the tribal monitoring schedule. The tribal monitor shall have the authority to stop and redirect grading activities to evaluate the nature and significance of any archaeological resources discovered within the project limits. Such evaluation shall include culturally appropriate temporary and permanent treatment pursuant to the Cultural Resources Treatment and Monitoring Agreement, which may include avoidance of cultural resources, in-place preservation, data recovery, and/or reburial so the resources are not subject to further disturbance in perpetuity. Any reburial shall occur at a location determined between the District and the Consulting Tribe, details of which shall be addressed in the Cultural Resources Treatment and Monitoring Agreement. Treatment may also include curation of the cultural resources at a tribal curation facility, as determined in discussion among the District, the project archaeologist and tribal representatives as addressed in the Cultural Resources Treatment and Monitoring Agreement.

TRI-2: Cultural Resource Monitoring

Cultural Resources Monitoring Plan: Prior to grading activities, a Cultural Resources Monitoring Plan (plan) shall be prepared by a qualified archaeologist in consultation with the Consulting Tribe(s). The plan shall identify the location and timing of cultural resources monitoring. For the Cawston Lift Station Replacement Project, monitoring will consist of spot-checking by a qualified archaeologist and Tribal monitoring (per CUL-3).

The plan shall contain an allowance for the qualified archaeologist, based on observations of subsurface soil stratigraphy or other factors during initial grading, and in consultation with the Native American monitor and the lead agency, may reduce or discontinue monitoring as warranted if the archaeologist determines that the possibility of encountering archaeological deposits is low. The plan shall outline the appropriate measures to be followed in the event of unanticipated discovery of cultural resources during project implementation (including the survey to occur following vegetation removal and monitoring during ground-disturbing activities). The plan shall identify avoidance as the preferred manner of mitigation impacts to cultural resources. The plan shall establish the criteria utilized to evaluate the historic significance (per CEQA) of the discoveries, methods of avoidance consistent with CEQA Guidelines Section 15126.4(b)(3), as well as identify the appropriate data recovery methods and procedures to mitigate the effect of the project if avoidance of significant historical or unique archaeological resources is determined to be infeasible. The plan shall also include reporting of monitoring results within a timely manner, disposition of artifacts, curation of data, and dissemination of reports to local and state repositories, libraries, and interested professionals.

Worker Environmental Awareness Program: A qualified archaeologist and Consulting Tribe(s) tribal monitor shall attend a pre-grade meeting with District staff, the contractor, and appropriate subcontractors to discuss the monitoring program, including protocols to be followed if cultural material is encountered.

TRI-3: Evaluation of Discovered Artifacts

Artifacts discovered at the development site shall be inventoried and analyzed by the project archaeologist and tribal monitor. A monitoring report will be prepared detailing the methods and results of the monitoring program, as well as the disposition of cultural material encountered. If no cultural material is encountered, a brief letter report will be sufficient to document monitoring activities.

TRI-4: Disposition of Inadvertent Discoveries

If Native American cultural resources are recovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries with the tribe. The District shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains

as part of the required mitigation for impacts to cultural resources, and adhere to the following:

1) Preservation-in-place is the preferred option; preservation-in-place means avoiding the resources and leaving them in the place where they were found with no development affecting the integrity of the resource.

2) If preservation-in-place is not feasible, on-site reburial of the discovered items as detailed in the plan required pursuant to mitigation measure CUL-2 is the next preferable treatment measure. This shall include measures and provisions to protect the future reburial area from further impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items shall be permitted without the written consent of all Consulting Native American Tribal Governments.

3) In the event that on-site reburial is not feasible, the District will enter into a curation agreement with an appropriate qualified repository with Riverside County that meets federal standards per 36 Code of Federal Regulations 800 Part 79 and therefore would be curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation.

TRI-5: Non-Disclosure of Reburial Locations

It is understood by all parties that unless otherwise required by law, the site of any reburial of culturally sensitive resources shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The coroner, pursuant to the specific exemption set forth in California Government Code 6254(r), parties, and Lead Agencies will be asked to withhold public disclosure information related to such reburial.

Significance Determination

Less than significant impact with mitigation incorporated.

a.ii) 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: 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.

As discussed in *Section 3.5 Cultural Resources*, a Cultural Resources Technical Report was prepared by Rincon in 2025 (**Appendix C**) and, based on the results of the CHRIS and SLF searches the Project vicinity, is sensitive for prehistoric tribal cultural resources.

The CHRIS records search and other background research identified 81 previous cultural resources studies within one mile of the Project site, 11 of which overlap the Project study area, and 96 previously-recorded cultural resources within one mile of the Project area, two of which are located within or adjacent to the Project site boundaries. The SLF returned negative results and within one mile of the Project area.

Although there are no known tribal cultural resources within the Project site, the recorded boundaries of one prehistoric tribal cultural resource is within close proximity of the Project site. Thus, the Project area is considered sensitive based on previous studies and the locations of known archaeological resources. The pedestrian survey conducted in June 2025 did not identify any artifacts or features within the Project site that may be associated with the recorded tribal cultural resources; however, the southern portion of the resource P-33-007273 was observed within an open space and landscaped area adjacent to but outside of the Project site.

Per AB 52, EMWD initiated consultation with Native Tribes that are traditionally and culturally affiliated with the geographic area of the proposed Project to identify resources of cultural or spiritual value to the Tribe. On March 5, 2025, EMWD sent consultation notification letters to Native Tribes on EMWD's Master List pursuant to the requirements of AB 52 pertaining to government-to-government consultation. **Table 3-13** summarizes EMWD's consultation efforts. To date, EMWD has conducted consultation with three federally recognized Native Tribes: Pechanga Band of Indians, Rincon Band of Luiseño Indians, and Soboba Band of Luiseño Indians. An additional three Native Tribes were contacted but declined consultation or did not respond, as noted in **Table 3-13**.

Table 3-13: Tribal Consultation Summary

Tribe	Individual Contacted	Date Letter Mailed	Consultation Held
Agua Caliente	Pattie Garcia	03/05/2025	N/A
Morongo	Laura Chatterton	03/05/2025	N/A
Pechanga	Ebru Ozdil	03/05/2025	06/04/2025
Rincon	Cheryl Madrigal	03/05/2025	06/03/2025
Soboba	Joseph Ontiveros	03/05/2025	06/02/2025
Yuhaaviatam of San Manuel Nation	Alexandra McCleary	03/05/2025	N/A

During the consultation meeting, the responding Tribes highlighted their concerns for the general area, noting that the project is within Traditional Use Areas and considered sensitive. The Tribes provided recommendations to mitigate the potential impact to unknown buried tribal cultural artifacts that may be uncovered during the grading and excavation of the project.

Although no tribal cultural resources have been identified within the Project site, the proposed Project would involve ground disturbing activities during construction and there is potential to encounter previously unknown tribal cultural resources. Operation of the proposed Project would not involve ground disturbing activities.

Mitigation Measures

Refer to **Mitigation Measures TRI-1** through **TRI-5** in *Section 3.18, a.i)* above.

Significance Determination

Less than significant impact with mitigation incorporated.

3.19 Utilities and Service Systems

	Potentially Significant Impact	*Less Than Significant Impact 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?	[ ]	[ ]	[X]	[ ]
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	[ ]	[ ]	[ ]	[X]

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

Discussion

Water Service

EMWD provides and distributes potable water throughout Riverside County, including the Project area. The majority of EMWD's supply is imported via the State Water Project and the Colorado River Aqueduct for potable and non-potable use and groundwater recharge (EMWD 2021.b).

Wastewater Treatment

The Project area is located within EMWD's service area. EMWD provides wastewater services to approximately 268,000 customers within its service area and currently treats approximately 49 million gallons per day of wastewater at its four active regional water reclamation facilities through 1,813 miles of sewer pipelines (EMWD n.d.). EMWD's Perris Valley Regional Water Reclamation Facility receives typical daily flows of 15.5 million gallons per day, a current capacity of 22 million gallons per day, and a 100 million gallons per day ultimate capacity (EMWD 2021.b).

Stormwater Drainage

The Project is located with the Salt Creek Channel – Winchester/North Hemet Area Drainage Plan. Salt Creek Channel is owned by the Riverside County Flood Control and Water Conservation District (RCFC&WCD) and flows eastward from its intersection with the Hemet Storm Channel to the City of Menifee. The Channel collects stormwater runoff from a series of north-south oriented, smaller drains and channels along its course. Smaller drains and channels are owned and maintained by the RCFC&WCD (RCFC&WCD n.d.).

Electrical, Natural Gas, and Telecommunications Utilities

Electrical service in the Project area is provided by SCE. SCE's 2022 power content mix utilized approximately 33 percent renewables, 3 percent large hydroelectric, 25 percent natural gas, 8 percent nuclear, and 30 percent from unspecified power sources through transactions (SCE 2022). Southern California Gas Company is the natural gas service provider in the Project area. Southern California Gas Company (SoCal Gas) maintains a distribution line delivering natural gas to the Project area via an existing high-pressure distribution pipeline underneath Domenigoni Parkway (SoCal Gas n.d.). Telecommunications facilities in the Project area consist of cable networks, including underground conduit located within public roadways, and overhead lines often co-located with electric wire.

Landfills

Solid waste generated by the Project would be disposed of at the Lamb Canyon Sanitary Landfill, El Sobrante Landfill and/or, the Badlands Sanitary Landfill. The total remaining capacity at each of these landfills is shown in **Table 3-14**.

Table 3-14: Sanitary Landfill Maximum Permitted and Existing Capacity

Landfill	Maximum Permitted Capacity (cubic yards)	Remaining Capacity (cubic yards)	Ceased Operation Date
Lamb Canyon[1]	39,681,513	14,540,000	4/1/2032
El Sobrante[2]	209,910,000	121,083,583	1/1/2051
Badlands[3]	82,300,000	4,900,000	1/1/2059

Sources
[1]CalRecycle n.d.a
[2]CalRecycle n.d.b
[3]CalRecycle n.d.c.

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?

The Project would construct a new potable water pipeline and conversion of an existing pipeline to recycled water use to address the needs of planned growth and development occurring in Riverside County (see *Section 3.14 Population and Housing*). The Project would not require the construction of additional wastewater treatment facilities or expansion of existing wastewater treatment facilities. Additional recycled water flows from the Project are within the available capacity at EMWD's existing treatment facilities. Potable water service would not be reduced by the Project, because, although an existing potable water pipeline would be converted to recycled water use, the Project would also install a new potable water pipeline. Additionally, the Project would not affect drainage and stormwater management in the Project area because existing

culverts would be avoided during construction. The Project would not change drainage patterns along the alignments in such a manner as to require the construction of new drainage facilities. As discussed in *Section 2 Project Description* the new pipelines would not be associated with long-term energy usage or additional unplanned EMWD O&M activities. The pipelines would be constructed in the roadway right-of-way and would avoid existing utilities that are located in the right-of-way. Therefore, there would be no new utilities or relocation of utilities that could cause significant environmental effects.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

The Project proposes installing potable and recycled water pipelines to meet the needs of planned growth and development occurring in Riverside County. Construction of the Project would require a minimal water supply for purposes such as dust control and concrete mixing. Existing sources would be sufficient, and no new or expanded supply would be required for construction. Operation of the Project would not induce unplanned population growth that would require or result in the construction of new water treatment facilities or the expansion of existing facilities.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

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

As discussed in *Section 3.14 Population and Housing*, the Project would serve planned development that would occur with or without the Project and would not induce unplanned population or employment growth that would require or result in the construction of new or expanded wastewater collection infrastructure or treatment services.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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?

Construction of the Project would generate solid waste in the form of construction and demolition debris that would need to be hauled offsite and disposed of in a landfill by the Project's construction contractors. Construction and demolition material would include asphalt and concrete removed from paved areas and concrete, metal, and plastic pipe sections. While excavated soil would be reused onsite as backfill to the extent feasible, it is estimated that up to approximately 1,000 cubic yards of material would need to be exported and disposed at a permitted landfill in accordance with local and state solid waste disposal requirements. There are two state regulations that set standards for solid waste generation: AB 939 mandates 50 percent diversion of solid waste; and AB 341 mandates recycling programs to help reduce GHG emissions. Riverside County's Construction and Demolition Waste Diversion Program requires contractors to establish a plan for the diversion of at least 65 percent of this debris to approved Construction and Demolition facilities that would reuse, recycle, or repurpose the material. The existing landfills in the Project area noted in **Table 3-14** in the above 'Landfills' description section have remaining permitted capacity and would be available to accept non-hazardous demolition waste from the Project. Excess construction debris is anticipated to be within the permitted capacity of the local landfill after onsite backfill of excavated soil combined with adherence to mandatory construction waste diversion requirements. Operation of the Project is not anticipated to generate solid waste in the long-term. Solid waste generation would be limited to temporary construction activities and would not significantly affect available solid waste disposal capacity in the region.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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

Construction and operation of the Project would comply with local, state, and federal regulations related to solid waste. While operation of the Project is not anticipated to generate a long-term solid waste stream, construction activities would create debris such as excavated soil and demolished concrete, asphalt, metal, and plastic. Excavated soil would be backfilled to the extent possible, but the Project construction contractor would be required to dispose of excess construction debris in accordance with existing reduction statutes and regulations, such as Riverside County's Construction and Demolition Program, discussed in d) above, as well as

Assembly Bill (AB) 939 and AB 341. These regulations would determine the landfill to be used for disposal of construction debris, mandatory 50 percent diversion of solid waste (AB 939), and mandatory recycling programs to reduce GHG emissions (AB 341).

Mitigation Measures

None required.

Significance Determination

Less than significant impact.

3.20 Wildfire

	Potentially Significant Impact	*Less Than Significant Impact 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?	[ ]	[ ]	[X]	[ ]
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?	[ ]	[ ]	[X]	[ ]
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?	[ ]	[ ]	[ ]	[X]

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

Discussion

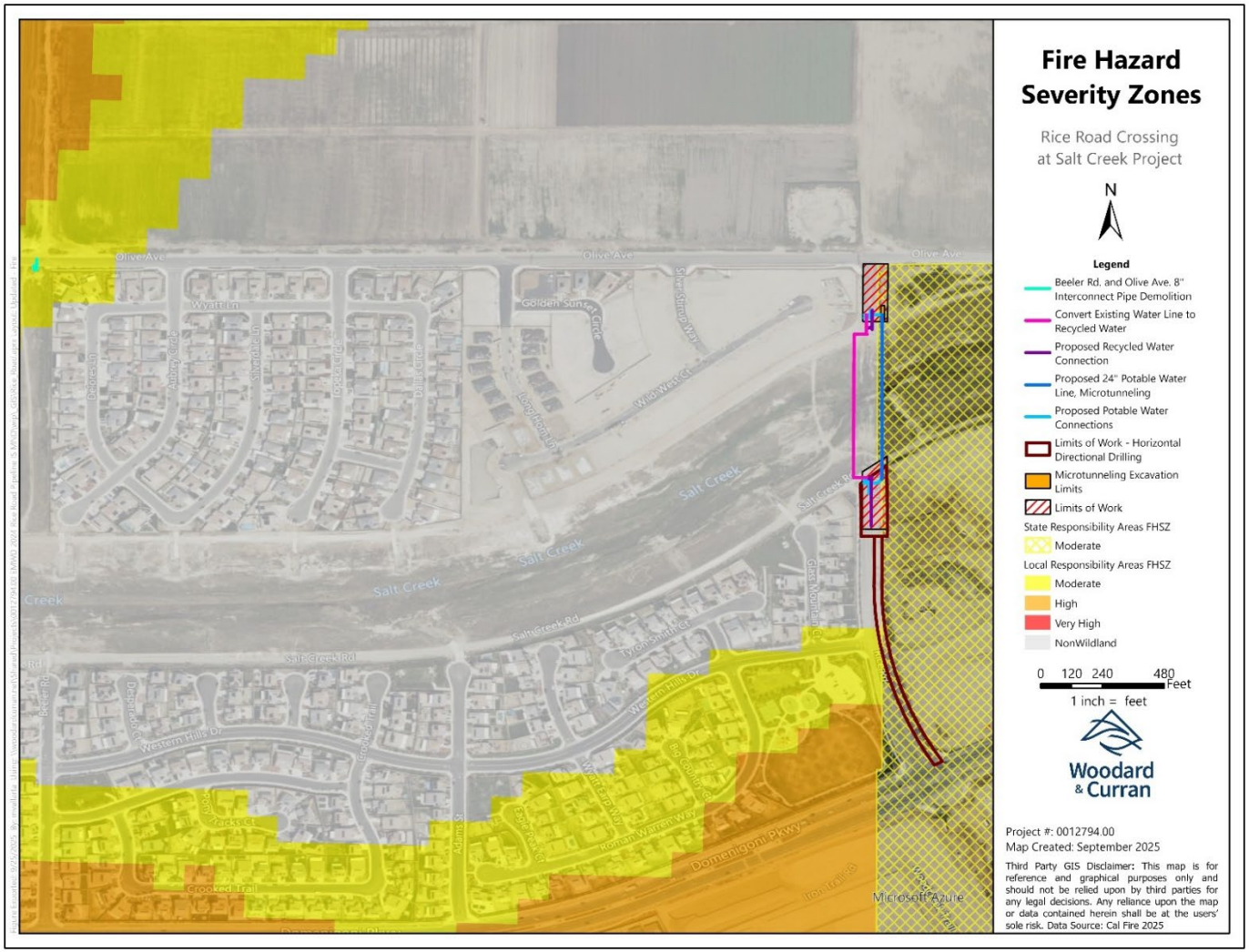
The Cal Fire's Fire Resources Assessment Program assesses the amount and extent of California's forests and rangelands, analyzes their conditions, and identifies alternative management and policy guidelines. Through the Fire Resources Assessment Program, Cal Fire produces maps designating very high FHSZ within State Responsibility Areas and Local Responsibility Areas. The Project area is within a State Responsibility Area and Local Responsibility Area. As mentioned in *Section 3.9 Hazards and Hazardous Materials*, The Project is within areas identified as moderate FHSZ (**Figure 3-5**).

The County of Riverside's EOP serves as the foundation for emergency preparedness and emergency response procedures (County of Riverside 2024). The County of Riverside has a Multi-Jurisdictional LHMP which identifies and reviews the County's past and present hazards and disasters. The LHMP estimates the probability of future occurrences and sets goals to mitigate potential risks to reduce or eliminate long term risk to people and property from natural and human-caused hazards (County of Riverside 2023b). The LHMP includes key measures and activities to help protect residents, critical facilities, infrastructure, key resources, private property, and the environment from natural hazards in incorporated and unincorporated areas.

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

Construction activities will occur outside of the existing ROW of Rice Road; however, the temporary work area, trenchless excavation limits, and some portions of the Project components are within the Local Responsibility Area's moderate FHSZ. Construction of the Project may temporarily restrict access for use by emergency response vehicles or emergency evacuations and could impair implementation of or physically interfere with the County of Riverside's EOP or LHMP. Prior to construction, EMWD would develop and implement a Traffic Control and Detour Plan as part of its Standard Construction Practices (see *Section 2.6 EMWD Standard Construction Practices*), which would reduce conflicts between temporary construction activities and the EOP and LHMP by requiring coordination with emergency services (police, fire, and others); requiring identification of roadways and access points for emergency services; and requiring that disruptions to or closures of these locations be minimized. Impacts of construction on the adopted EOP and LHMP would be less than significant. Further consideration of the proposed construction activities and potential for roadway access and hazardous conditions can be found under *Section 3.17 Transportation*.

Figure 3-5: Fire Hazard Severity Zones



Operation of the Project would not physically impair or otherwise interfere with adopted emergency response or evacuation plans in the Project area, as all disturbed ground surface would be returned to pre-construction conditions or paved after excavation and below-grade pipeline installation. Operation of the Project would not interfere with emergency evacuation plans and would involve minimal truck trips for maintenance as needed.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

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?

The Project is not located within a very high or high fire hazard severity zones; however, some portions of the Project components are within the moderate FHSZ (see **Figure 3-5**). The majority of the Project would be constructed on vacant land that does not have steep slopes. Pipelines would be installed below grade on parcels that do not have steep slopes. The use of construction equipment that could potentially spark or otherwise ignite a fire during normal construction activities poses a risk of fire in a high or very high FHSZ. The implementation of EMWD's standard fire safety construction measures (see *Section 2.6 EMWD Standard Construction Practices*), such as equipping construction equipment with spark arrestors, per industry standards, would ensure the Project would not exacerbate wildfire risks and thereby expose people in the Project area to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Mitigation Measures

None required or recommended.

Significance Determination

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?

The Project would not involve the installation or maintenance of infrastructure that is typically associated with fire risk, such as roads, fuel breaks, emergency water sources, or power lines. The Project would rely on existing roads for access during construction and O&M. Construction of the Project would occur within existing roads and vacant land and construction areas would be returned to pre-construction conditions.

Mitigation Measures

None required or recommended.

Significance Determination

No impact.

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

The Project would be located within existing dirt pathways and vacant lands. Pipelines would be installed below-grade and overlying ground surface would be restored to pre-construction conditions, resulting in no permanent impact on site drainage. The Project would have a less than significant impact related to storm water runoff (see *Section 3.10 Hydrology and Water Quality*).

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
Does the Project:				
a) 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	[ ]	[X]	[ ]	[ ]

	range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				
b)	Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	[ ]	[ ]	[X]	[ ]
c)	Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	[ ]	[X]	[ ]	[ ]

Discussion

a) 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?

Four special status wildlife species are present or have a moderate potential to occur within the broader Biological Study Area: (1) burrowing owl, (2) Crotch's bumble bee, (3) smooth tar plant, and (4) Stephen's kangaroo rat. Migratory and nesting birds may also be present or have the potential to occur. As discussed in Section 3.4 and Appendix B, none of these species have the potential to occur within the Project disturbance area, which is limited to existing paved and dirt roadways as well as disturbed/developed lands that lack suitable habitat for the special status species. However, the analysis concluded that indirect impacts may occur to these species due to noise and dust generation during construction of the Project. Mitigation measures listed below, and detailed in the respective sections, ensure all noise and dust impacts are reduced to a less than significant level. Lastly, the analysis concluded that the HDD method of pipeline construction under Salt Creek utilizes non-toxic, inert bentonite drilling fluid which could impact the streambed in the event of accidental fac-out. Mitigation has been identified to ensure this impact is reduced to a less than significant level. Therefore, proposed Project does not 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 rare or endangered plant or animal species.

The Project site is directly underlain by Pleistocene alluvial sediments and Holocene alluvial valley deposits. At depths of 5 feet or more beneath the surface, the Holocene alluvial deposits are likely underlain by Pleistocene alluvial sediments, given their proximity. In Riverside County, Pleistocene alluvial sediments are known to contain paleontological resources. Mitigation listed below (Geo-1 and 2) and detailed in Section 3.7 would ensure potential fossil impacts are reduced to a level of insignificance. Therefore, the proposed Project is not expected to eliminate important examples of the major periods of California prehistory.

Mitigation Measures

Refer to **Mitigation Measures BIO-1 through BIO-7, CUL-1, GEO-1 through GEO-3, HYD-1, NOI-1, and TRI-1 through TRI-5.**

Significance Determination

Less than significant impact with mitigation incorporated.

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

CEQA Guidelines Section 15130(b) provides two approaches to discussing cumulative project impacts, either the List-of-Projects Method: a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or the Summary-of-Projections Method: a summary of projections contained in an adopted general plan or related planning document or in a prior environmental document that has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency. EMWD is relying on the List-of-Projects method for purposes of this analysis.

The Project was included in EMWD's Capital Improvement Program Quarterly Report for Fiscal Year 2023/2024 Quarter 4. The Winchester 1650 Pressure Zone Realignment, which was also in the Capital Improvement Program Quarterly Report for Fiscal Year 2023/2024 Quarter 4, is within the vicinity of the Project area. However, the Winchester 1650 Pressure Zone Realignment is in the planning, not construction, stage. Thus, there would not be construction related effects that would occur at the same time as the Project. No additional EMWD projects are proposed in the Project vicinity that, together with the Project, could result in cumulative impacts.

Mitigation Measures

None required or recommended.

Significance Determination

Less than significant impact.

c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Although standard construction measures would be implemented during construction of the Project (see *Section 2.6 EMWD Standard Construction Practices*), temporary construction activities would still have the potential to exceed noise thresholds.

Mitigation Measures

Refer to **Mitigation Measures NOI-1** and **NOI-2**

Significance Determination

Less than significant impact with mitigation incorporated.

4. REPORT PREPARATION

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APPENDIX A: CALEEMOD AIR QUALITY DATA SHEETS

Rice Road Pipeline at Salt Creek_2 Detailed Report

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1.1. Basic Project Information

Data Field	Value
Project Name	Rice Road Pipeline at Salt Creek_2
Construction Start Date	10/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	0.20
Location	33.698275, -117.093602
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5508
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Asphalt Surfaces	23.0	1000sqft	0.53	0.00	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, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.39	4.50	34.5	38.5	0.10	1.25	0.34	1.55	1.15	0.09	1.22	—	9,898	9,898	0.40	0.13	0.05	9,942
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.86	0.72	5.51	6.15	0.02	0.20	0.04	0.23	0.18	0.01	0.19	—	1,605	1,605	0.06	0.02	0.11	1,612
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	0.13	1.01	1.12	< 0.005	0.04	0.01	0.04	0.03	< 0.005	0.03	—	266	266	0.01	< 0.005	0.02	267
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	5.39	4.50	34.5	38.5	0.10	1.25	0.30	1.55	1.15	0.07	1.22	—	9,898	9,898	0.40	0.12	0.04	9,942
2026	0.57	0.47	4.70	4.96	0.01	0.19	0.34	0.53	0.18	0.09	0.27	—	1,595	1,595	0.04	0.13	0.05	1,636
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.86	0.72	5.51	6.15	0.02	0.20	0.04	0.23	0.18	0.01	0.19	—	1,605	1,605	0.06	0.02	0.07	1,612
2026	0.07	0.06	0.57	0.60	< 0.005	0.02	0.04	0.06	0.02	0.01	0.03	—	192	192	0.01	0.02	0.11	198
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.16	0.13	1.01	1.12	< 0.005	0.04	0.01	0.04	0.03	< 0.005	0.03	—	266	266	0.01	< 0.005	0.01	267
2026	0.01	0.01	0.10	0.11	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	31.9	31.9	< 0.005	< 0.005	0.02	32.7

3. Construction Emissions Details

3.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	3.65	3.05	22.8	24.6	0.07	0.91	—	0.91	0.84	—	0.84	—	6,808	6,808	0.28	0.06	—	6,831
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.37	2.75	2.97	0.01	0.11	—	0.11	0.10	—	0.10	—	821	821	0.03	0.01	—	823
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.50	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	—	136	136	0.01	< 0.005	—	136
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.09	1.11	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	246	246	0.01	0.01	0.03	249
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.23	0.05	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	196	196	< 0.005	0.03	0.01	205
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.1	30.1	< 0.005	< 0.005	0.05	30.5
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	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.6	23.6	< 0.005	< 0.005	0.02	24.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.98	4.98	< 0.005	< 0.005	0.01	5.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.91	3.91	< 0.005	< 0.005	< 0.005	4.10

3.3. Dewatering (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	1.64	1.36	11.4	12.7	0.03	0.33	—	0.33	0.31	—	0.31	—	2,648	2,648	0.11	0.02	—	2,657
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	0.30	0.25	2.06	2.29	0.01	0.06	—	0.06	0.06	—	0.06	—	479	479	0.02	< 0.005	—	480
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	0.38	0.42	< 0.005	0.01	—	0.01	0.01	—	0.01	—	79.3	79.3	< 0.005	< 0.005	—	79.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Microtunneling (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	1.82	1.53	11.0	12.4	0.04	0.41	—	0.41	0.38	—	0.38	—	4,174	4,174	0.17	0.03	—	4,189
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	0.11	0.09	0.67	0.74	< 0.005	0.02	—	0.02	0.02	—	0.02	—	252	252	0.01	< 0.005	—	252
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	0.02	0.12	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	41.7	41.7	< 0.005	< 0.005	—	41.8
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	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. Paving (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	0.40	3.78	4.21	0.01	0.18	—	0.18	0.16	—	0.16	—	699	699	0.03	0.01	—	701

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Paving	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.46	0.51	< 0.005	0.02	—	0.02	0.02	—	0.02	—	84.2	84.2	< 0.005	< 0.005	—	84.5
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Paving	< 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	0.01	0.01	0.08	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.9	13.9	< 0.005	< 0.005	—	14.0
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Paving	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.54	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	127	127	< 0.005	< 0.005	0.01	128
Vendor	0.00	0.00	0.00	0.00	0.00	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	0.03	0.01	0.88	0.21	0.01	0.02	0.21	0.22	0.02	0.06	0.07	—	770	770	0.01	0.12	0.04	807
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.5	15.5	< 0.005	< 0.005	0.02	15.7
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	0.11	0.03	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	92.8	92.8	< 0.005	0.01	0.08	97.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.56	2.56	< 0.005	< 0.005	< 0.005	2.60
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	0.01	16.1

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

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
Trenching	Grading	10/1/2025	12/1/2025	5.00	44.0	Trenching
Dewatering	Building Construction	10/1/2025	12/31/2025	5.00	66.0	Dewatering
Microtunneling	Building Construction	12/2/2025	12/31/2025	5.00	22.0	Microtunneling
Paving	Paving	1/1/2026	3/3/2026	5.00	44.0	Paving

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Trenching	Cranes	Diesel	Average	2.00	6.00	148	0.41
Trenching	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	367	0.40
Trenching	Welders	Diesel	Average	1.00	6.00	84.0	0.37
Trenching	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Trenching	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Trenching	Air Compressors	Diesel	Average	1.00	4.00	37.0	0.48
Trenching	Generator Sets	Diesel	Average	2.00	6.00	14.0	0.74
Trenching	Sweepers/Scrubbers	Diesel	Average	1.00	6.00	36.0	0.46
Trenching	Concrete/Industrial Saws	Diesel	Average	3.00	4.00	33.0	0.73
Trenching	Off-Highway Trucks	Diesel	Average	2.00	6.00	376	0.38
Dewatering	Bore/Drill Rigs	Diesel	Average	1.00	4.00	367	0.29
Dewatering	Generator Sets	Diesel	Average	2.00	6.00	82.0	0.20
Dewatering	Pumps	Diesel	Average	4.00	8.00	84.0	0.37
Dewatering	Off-Highway Trucks	Diesel	Average	1.00	4.00	376	0.38
Microtunneling	Tractors/Loaders/Backhoes	Diesel	Average	2.00	5.00	84.0	0.37
Microtunneling	Excavators	Diesel	Average	1.00	8.00	367	0.29

Microtunneling	Plate Compactors	Diesel	Average	2.00	8.00	82.0	0.20
Microtunneling	Cranes	Diesel	Average	1.00	4.00	367	0.29
Microtunneling	Off-Highway Trucks	Diesel	Average	3.00	4.00	376	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	10.0	0.56
Paving	Pavers	Diesel	Average	2.00	7.00	81.0	0.42

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Trenching	—	—	—	—
Trenching	Worker	19.0	18.5	LDA,LDT1,LDT2
Trenching	Vendor	—	10.2	HHDT,MHDT
Trenching	Hauling	2.84	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT
Dewatering	—	—	—	—
Dewatering	Worker	0.00	18.5	LDA,LDT1,LDT2
Dewatering	Vendor	0.00	10.2	HHDT,MHDT
Dewatering	Hauling	0.00	20.0	HHDT
Dewatering	Onsite truck	—	—	HHDT
Microtunneling	—	—	—	—
Microtunneling	Worker	0.00	18.5	LDA,LDT1,LDT2
Microtunneling	Vendor	0.00	10.2	HHDT,MHDT
Microtunneling	Hauling	0.00	20.0	HHDT
Microtunneling	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	10.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT

Paving	Hauling	11.4	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Apply dust suppressants to unpaved roads	84%	84%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Trenching	0.00	1,000	0.00	0.00	—
Paving	1,000	0.00	0.00	0.00	0.37

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Asphalt Surfaces	0.37	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

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

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

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	28.6	annual days of extreme heat
Extreme Precipitation	2.60	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	18.7	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

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

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	84.6
AQ-PM	38.8

AQ-DPM	5.48
Drinking Water	10.2
Lead Risk Housing	12.9
Pesticides	86.4
Toxic Releases	17.2
Traffic	20.9
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	47.4
Haz Waste Facilities/Generators	4.94
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	37.1
Cardio-vascular	71.4
Low Birth Weights	54.8
Socioeconomic Factor Indicators	—
Education	49.8
Housing	33.2
Linguistic	11.3
Poverty	22.2
Unemployment	48.3

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	69.48543565

Employed	22.67419479
Median HI	66.84203773
Education	—
Bachelor's or higher	36.23764917
High school enrollment	100
Preschool enrollment	4.311561658
Transportation	—
Auto Access	98.98626973
Active commuting	32.61901707
Social	—
2-parent households	85.07635057
Voting	31.88759143
Neighborhood	—
Alcohol availability	97.0101373
Park access	5.864237136
Retail density	1.180546644
Supermarket access	6.493006544
Tree canopy	3.592968048
Housing	—
Homeownership	82.47144874
Housing habitability	88.42551007
Low-inc homeowner severe housing cost burden	83.22853843
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	73.18105993
Arthritis	93.3
Asthma ER Admissions	70.5

High Blood Pressure	94.9
Cancer (excluding skin)	77.2
Asthma	49.0
Coronary Heart Disease	95.4
Chronic Obstructive Pulmonary Disease	86.1
Diagnosed Diabetes	95.0
Life Expectancy at Birth	80.5
Cognitively Disabled	25.4
Physically Disabled	45.1
Heart Attack ER Admissions	10.0
Mental Health Not Good	51.7
Chronic Kidney Disease	93.4
Obesity	49.6
Pedestrian Injuries	19.6
Physical Health Not Good	81.0
Stroke	93.8
Health Risk Behaviors	—
Binge Drinking	2.0
Current Smoker	37.0
No Leisure Time for Physical Activity	68.2
Climate Change Exposures	—
Wildfire Risk	12.5
SLR Inundation Area	0.0
Children	0.3
Elderly	68.4
English Speaking	81.2
Foreign-born	18.1
Outdoor Workers	30.5

Climate Change Adaptive Capacity	—
Impervious Surface Cover	83.8
Traffic Density	7.3
Traffic Access	23.0
Other Indices	—
Hardship	34.8
Other Decision Support	—
2016 Voting	57.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	30.0
Healthy Places Index Score for Project Location (b)	49.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification

Construction: Construction Phases	Per project description
Construction: Off-Road Equipment	Per project description
Construction: Paving	16000 ft2, per project description
Construction: Dust From Material Movement	Per project description
Construction: Trips and VMT	Per project description

APPENDIX B: BIOLOGICAL RESOURCES TECHNICAL REPORT



Eastern Municipal Water District
Rice Road Pipeline at Salt Creek Project

Biological Resources Technical Report

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RINCON CONSULTANTS

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1 Introduction

Woodard and Curran retained Rincon Consultants, Inc. (Rincon) on behalf of the Eastern Municipal Water District (EMWD) to prepare a Biological Resources Technical Report (BRTR) in support of California Environmental Quality Act (CEQA) compliance for the EMWD Rice Road Pipeline at Salt Creek Project (project) in the community of Winchester in Riverside County, California. Rincon prepared this BRTR to document existing conditions and to evaluate the potential for impacts to biological resources during future implementation of the project, which proposes to install a new water line and new recycled water line via trenchless construction across Salt Creek on two parcels (Assessor's Parcel Numbers 461-200-038 and 461-220-009) adjacent to the Rice Road right-of-way (ROW) between Olive Avenue to the north and Domenigoni Parkway to the south. The project would also convert the existing potable pipeline within the creek to a recycled water line. This report has been prepared in accordance with CEQA and the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP or Plan). Although EMWD is not a Permittee under the MSHCP, any projects proposed within the Plan area must take all applicable policies and guidelines into consideration to demonstrate that no conflicts with the MSHCP would occur as required by CEQA. As such, this BRTR also examines biological resources consistent with the MSHCP. In addition, project construction may occur outside of the Rice Road ROW that crosses Salt Creek, requiring EMWD to obtain an encroachment permit from the Riverside County Flood Control and Water Conservation District (RCFC&WCD). The RCFC&WCD is a Permittee to the MSHCP.

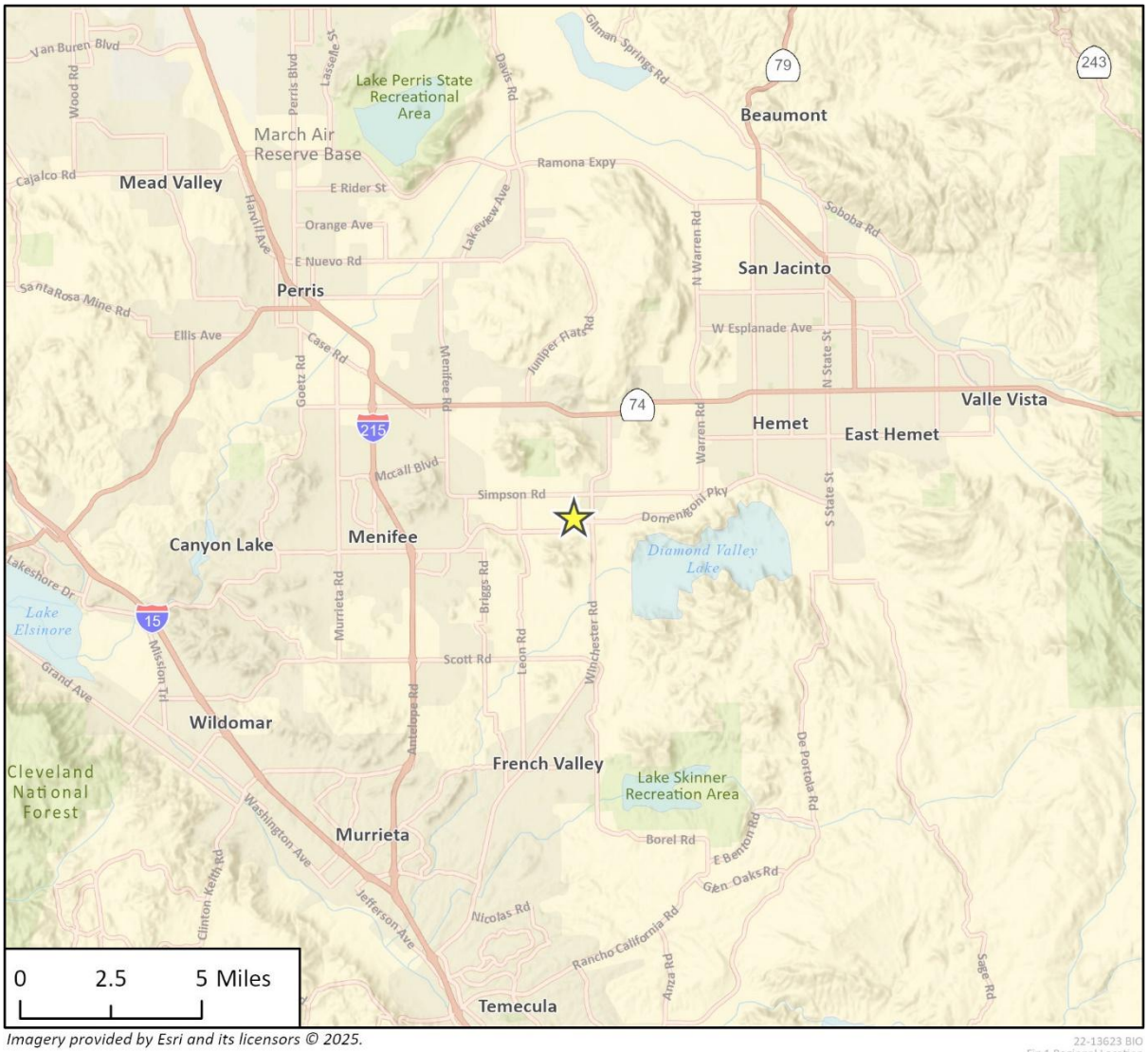
The encroachment permit may specify protection measures that would be implemented during construction activities to address temporary impacts to MSHCP-conserved lands designated as Public/Quasi-Public (PQP) lands. Protection measures may include restoration of all disturbed areas, including areas disturbed within PQP land, immediately following construction. None of the work that would encroach into the PQP lands would alter the functions and values of these lands. Riverside County Transportation Department (RCTD) would need to issue an encroachment permit for proposed work within the Rice Road right-of-way.

1.1 Project Location

The project site is located in Winchester primarily along Rice Road between Olive Avenue and Western Hills Drive (Figure 1 and Figure 2), situated within the United States Geological Survey *Winchester* CA 7.5-minute quadrangle. Surrounding land use includes primarily residential communities, as well as undeveloped lands along either side of Rice Road to the east and west, respectively. Proposed staging areas for construction equipment include the existing paved ROW on Rice Road to the north, and the paved ROW along Rice Road to the south (Figure 2).

An additional project component was added approximately one-half mile west of the project site on Olive Avenue and Beeler Road. There is a proposed temporary connection between the potable water system and the recycled water system. The work is confined to the Olive Avenue ROW.

Figure 1 Regional Location



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Fig 1 Regional Location

Project Location

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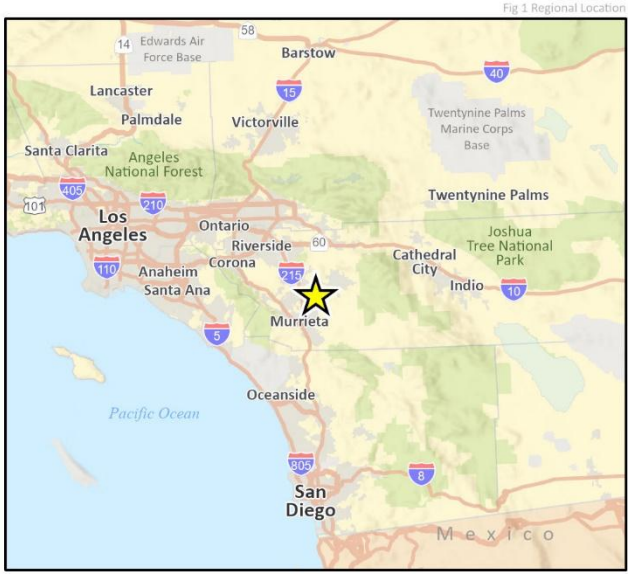
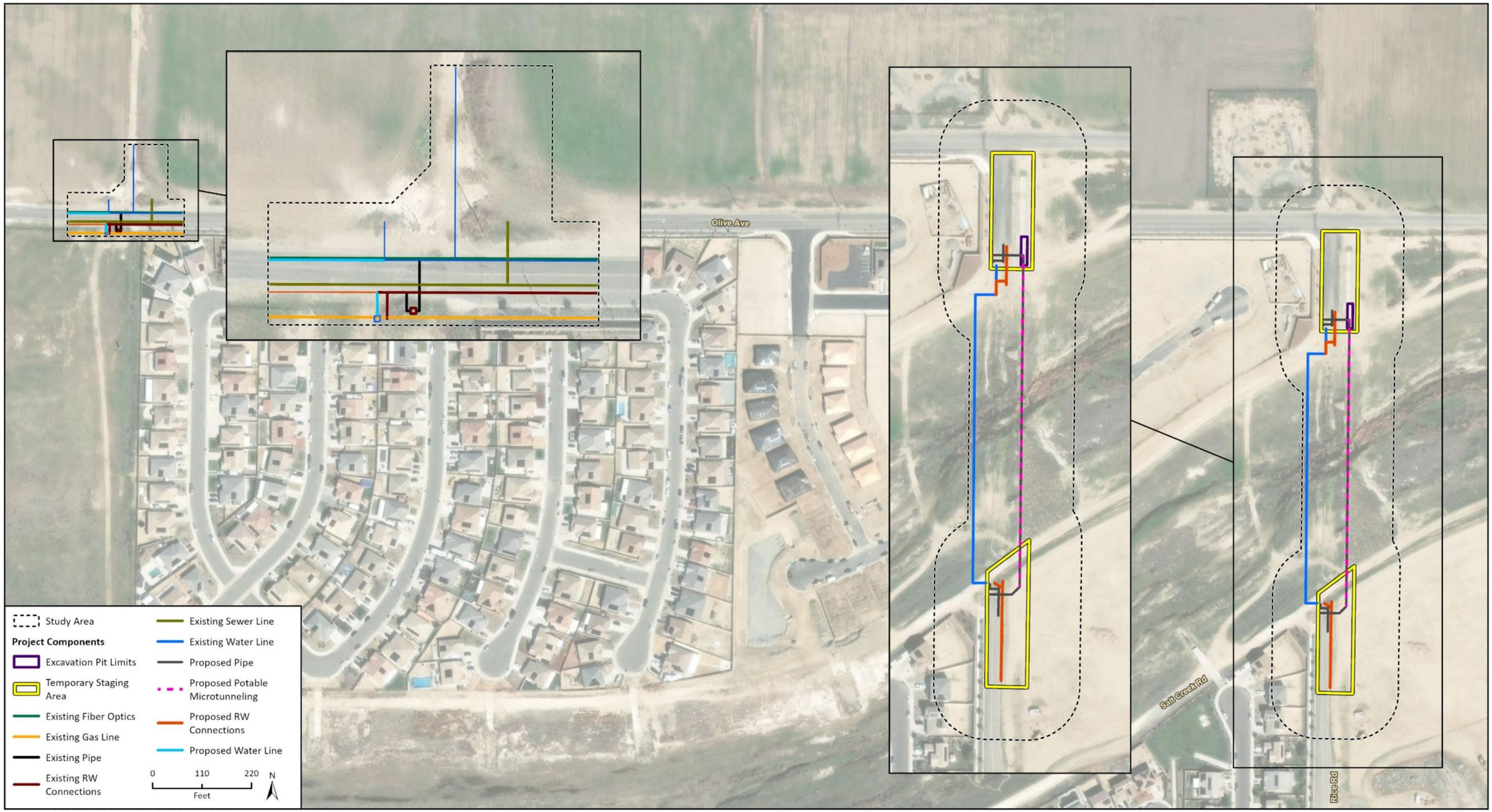


Figure 2 Project Location



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Fig X Project Location - 11x17

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1.2 Project Description

The project involves constructing 800 linear feet of new potable water pipeline, followed by conversion of approximately 700 linear feet of an existing potable water pipeline to a recycled water pipeline. It would also involve new pipeline connections to existing potable water and recycled water pipelines, and demolition and removal of approximately 20 feet of eight-inch pipeline and above-ground assemblies at the intersection of Olive Avenue and Beeler Road. Construction details are provided in the following sections.

1.2.1 Pipeline Construction

The new 24-inch potable water pipeline would be constructed using trenchless methods. This ensures that no construction activity would occur in the streambed of Salt Creek. All work would be undertaken outside of the limits of jurisdictional waters of the State or U.S. There are two trenchless methods that could be utilized to complete the crossing. Option one is Horizontal Directional Drilling (HDD) and would entail drilling in the pipeline from one side of the creek to the other using a drill rig on the ground surface. Option two is to use microtunneling, from a launch shaft located on the north side of Salt Creek, to a reception shaft located on the south side of Salt Creek. Outside of jurisdictional limits, the new potable water pipeline and converted recycled water pipeline would connect to an existing 18-inch potable water and existing 18-inch recycled water distribution systems using open cut construction methods. The new recycled water lines would be 18 inches in diameter. Pavement restoration is designed to match the existing four-inch asphalt over four-inches of Class II aggregate base and would adhere to Riverside County's paving standards.

1.2.2 Trenchless Excavation

Option 1: Horizontal Directional Drilling

Option one would utilize Horizontal Directional Drilling to install the potable water pipeline underneath Salt Creek. HDD is a surface launched trenchless method used to install pipelines ranging in diameter from as small as a few inches up to 60 inches in diameter, although installations typically are 48 inches or less. HDD lengths can be several thousand feet long with single installation lengths achieved of well over 5,000 feet. HDD is capable of operating in a variety of soil and rock ground conditions, and can operate below the groundwater table. HDD is considered to be a feasible installation method to install the potable water pipeline below Salt Creek.

The HDD installation process requires several installation phases. HDD is performed from the ground surface by installing the pipeline in an arch from an entry point to an exit point. The drill profile has straight sections near the entry and exit points and the alignment is curved at depth to reach the desired depth. A straight section may connect the curved sections. Horizontal bends in plan can also be incorporated as needed. Pipe types that can be installed using HDD typically include high density polyethylene (HDPE), polyvinyl chloride (PVC), and steel.

A brief sequence of operations for a typical HDD is as follows:

1. Drilling equipment mobilized to site. Typical equipment includes a drilling rig and mud separation plant for separating drilling mud from solids removed during the drilling process. Additional ancillary equipment is also required.
2. Excavate shallow pits to contain drilling mud at both the entry and exit points.

3. Begin drilling pilot bore from entry to exit. This is completed with a small diameter steel drill rod and drill bit to define the drill path. During drilling processes, drilling mud is circulated from the tip of the drill stem to circulate cuttings back to the entry pit and to hold the borehole open. Drilling mud typically consists of clay bentonite mixed with water and is non-toxic.
4. Once the pilot bore is complete, a reamer is attached at the exit side to the pilot bore drill rod to increase the hole diameter. Multiple reamer sizes may be required.
5. Once the final borehole diameter is achieved, the product pipe is attached to the drill rod and pulled into the hole. Ideally, the entire product pipe is welded or fused at ground surface prior to pull back such that pull back can occur continuously which mitigates risk of hole collapse.

During pilot bore drilling, reaming, and pipe pull back (steps 3, 4, and 5), drilling mud is injected through the drill pipe and is circulated back to the entry and exit pits along with soil cuttings. The mud separation plant removes solids and recirculates drilling mud back into the drilling process.

Option 2: Microtunneling

Option two would utilize microtunneling to install the potable water pipeline underneath Salt Creek including installing an approximate 610-foot long 48-inch steel casing with a 24-inch carrier pipe. Microtunneling is a trenchless construction method that involves a remotely controlled, guided microtunneling boring machine (MTBM) with a cutter wheel that excavates material at the face as the machine is jacked, or pushed, forward. The excavation depth, precision guiding, and low face pressure provides continuous positive control of earth and groundwater pressures to support the face of the excavation, which reduces the risk of over-excavation, settlement, or damage to creek infrastructure. As the MTBM advances forward, the casing pipe is jacked from the jacking shaft (approximately 18-foot by 35-foot) on the north side of the creek to the reception shaft (approximately 12-foot by 20-foot) on the south side of the creek. The excavated material is mixed with clean slurry and pumped to the surface for separation and removal utilizing a processing plant. Staging would be located adjacent to the MTBM launch location on the north side of the creek inside the limits of work area.

Groundwater is anticipated to be encountered, and thus, microtunneling shafts would need to be watertight. A typical way to achieve a water-tight shaft is to use interlocking sheet piles, although there are alternative watertight shoring methods. Sheet piles can be installed in a variety of ways including pressing, vibratory driving, and impact. These methods require a crane to hoist the sheet piles into position. Pressing installation utilizes a hydraulic press or other equipment (e.g., backhoe), depending on the soil conditions, to provide the force to drive the sheet pile into the ground. Vibratory sheet pile driving uses vibratory hammers to decrease the resistance between the sheet pile and the surrounding soil and allows the sheet pile to be lowered into position. An impact hammer is typically used in hard or dense soil conditions, which are not anticipated for the project. The precise method of shaft excavation, sheeting, shoring, and waterproofing would be determined during construction.

After construction is complete, all pipeline construction areas would be restored to pre-construction conditions. Replacement of pavement would follow Riverside County standards.

1.2.3 Open-Cut Trenching

Open cut construction includes trench excavation, placement of new pipe bedding, installation of new pipeline, backfill and compaction, and surface restoration. This method would be used to construct the remaining portions of the new 24-inch water pipeline between the trenchless portion

and points of connection to existing water pipelines, and the connections between the converted 12-inch recycled water pipeline and the existing 18-inch recycled water piping. Open cut trenches could be as deep as 20 feet and as wide as six feet. During construction, excavated material would be stored within the limits of work. After construction is complete, all open trench areas would be restored to pre-construction conditions.

1.2.4 Dewatering

Dewatering would not be required for Trenchless Option 1: HDD; however, it is assumed to be required for Trenchless Option 2: Microtunneling on the north side of the creek. The existing groundwater depth on the south side of the creek is expected to be deep enough to not require dewatering. Under Option 2: Microtunneling, groundwater on the north side of the creek would be lowered to a depth of no less than five feet below excavation level for microtunnel launch shaft. Various techniques could be used to sink the shaft including active dewatering simultaneous with shaft excavation. Under this technique, dewatering would cease when the shaft is shored and made watertight. Another option is to install a perimeter of watertight shoring, such as sheet piling, to full depth prior to excavation. Once watertight shoring is installed, a shaft base plug would be installed inside the bottom of the shaft using either jet grouting from the surface or by placing concrete using tremie methods. Once installed, the shaft interior is considered watertight and the ground inside of the shaft would be excavated.

Under the dewatering during excavation method, a series of small diameter wells would be drilled around the excavation site to pump groundwater out of the shaft during excavation and microtunneling. This dewatering system consists of four to six wells drilled to an approximate depth of 40 feet. The actual number of wells depends on soil permeability and dewatering flow rates encountered during construction. Each well borehole would be 24 inches in diameter. A 12-inch well with 20-feet of PVC screened pipe and up to 20-feet of PVC encased pipe would be placed in the center of the borehole. The screened zone of each well would be filled with filtering material, while the remainder of the borehole would be backfilled with clean sand up to the ground surface. Each well would be furnished with an electric well pump capable of maintaining the estimated flow rates. Standby equipment and standby power supply would be provided. The ring of point wells would encircle the microtunneling shaft, within the limits of work.

Discharge locations would be determined during construction. Possible discharge options for groundwater pumped from the ground include:

- Discharge back into Salt Creek
- Pre-treat the water and discharge to a nearby 36-inch sanitary sewer in Olive Avenue
- Land spreading to allow it to percolate back into the ground

Baker tanks may be required to settle silt out prior to discharge, depending on the discharge option used. If the selected discharge option is to the sanitary sewer, additional treatment for dissolved solids and sulfates may be required. Treatment equipment would be located within the limits of work north of Salt Creek. Treatment and monitoring of groundwater would be conducted in accordance with applicable National Pollutant Discharge Elimination System discharge permits. The dewatering system would be removed upon completion of microtunneling construction.

1.2.5 Interconnect Pipe Demolition

The project includes demolition and removal of approximately 20 feet of eight-inch interconnect pipeline and above-ground assemblies at the intersection of Olive Avenue and Beeler Road. Demolition and removal would involve the use of an excavator, pavement breaker, concrete saw, and dump hauling truck. The area of excavation would be approximately 70 feet long, eight feet deep, and three feet wide. During construction, excavated material would be stored within the roadway right of way. Once the interconnection pipe has been demolished, concrete plugs would be installed at the ends of the remaining pipe and filled with grout. After construction is complete, pavement would be replaced following Riverside County standards and all temporary work areas would be restored to pre-construction conditions. The existing interconnect pipe is situated within the shoulder and within the eastbound lane of Olive Avenue; traffic controls and a lane closure may be required during construction. Removal of the interconnection would last approximately one week and would occur after the converted recycled water pipeline becomes operational.

1.2.6 Equipment and Vehicles

Construction of the pipelines would require the estimated construction equipment shown in Table 1.

Table 1 Construction Vehicle Fleet

Equipment	Number Required
Backhoe/loader	2
Hydraulic excavator	2
Pile driving machine, hammer or vibration pile driving	2
Crane	2
Utility truck	1
Microtunneling machine	1
Water truck	2
Welder	1
Compressor	1
Pump	4
Pick-up trucks	2
Dump trucks	3
Concrete saw	3
Pavement breaker	2
Sweeper	1
Paver	3
Generators	2
Drill rig for dewatering wells	1
Generators for dewatering wells electric pumps	6

For Option 1: HDD, it is estimated that 605 cubic yards (CY) of spoil would be generated by the Project. Of this, a total of approximately 260 CY of spoil would be generated by HDD, 30 CY for small pits on either side of the crossing, and approximately 250 CY of spoil from the open trench segments and approximately 65 CY of spoil from the interconnect pipe demolition. Excavated material may be reused onsite as backfill; however, this would not be determined until excavation starts. If material cannot be reused for backfill, then it would be exported from the site. For the purposes of this analysis, it is assumed that 50% of the material would be hauled offsite for disposal. After construction is complete, all pipeline construction areas would be restored to pre-construction conditions.

For Option 2: Microtunneling, it is estimated that a total of 1,850 cubic yards (CY) of spoil would be generated by the project. Of this, a total of approximately 350 CY of spoil would be generated from microtunnelling, 875 CY of spoil from the microtunnel launch pit, approximately 310 CY of spoil from the receiving pit, and approximately 250 CY of spoil from the open trench segments and 65 CY of spoil from the interconnect pipe demolition. Excavated material may be reused onsite as backfill; however, this would not be determined until excavation starts. If material cannot be reused for backfill, then it would be exported from the site. For the purposes of this analysis, it is assumed that 50% of the material would be hauled offsite for disposal. After construction is complete, all pipeline construction areas would be restored to pre-construction conditions.

1.2.7 Construction Schedule

Project construction is anticipated to begin in early 2026 and last approximately six months. For Option 1: HDD, the entire length of the pipeline under the creek would be completed in approximately two weeks. For Option 2: Microtunneling, the pipelines would be constructed at a rate of 30 feet of pipeline per day. The interconnect pipe demolition work would last approximately one week. The actual rate of construction would depend on soil conditions, extent of existing utilities, traffic control, and permitted work hours. Construction would take place during daylight hours only. EMWD anticipates the pipelines would be operational by late 2026.

1.2.8 Temporary Construction Work Areas

Temporary construction work areas and staging areas are included in this environmental analysis. The size, location, and number of staging areas would be finalized as part of construction planning. The intent is for equipment to be staged within Rice Road public right-of-way, much of which is paved in the Project area.

For the pipeline crossing of Salt Creek, using Option 1: HDD, an approximately 15,000 square feet temporary area may be required for HDD and open trench work, located on the north side of Salt Creek. This work area is approximately 80 feet by 224 feet long and is comprised of paved road, non-paved shoulders, and a concrete lined v-ditch. In addition, an additional approximately 800 feet by 20 feet staging area would be required on the north side of Salt Creek extending northward from the HDD pit to lay down the fused pipe above ground prior to pulling it back through the borehole under the creek. The pipe laydown staging area could utilize the paved portion within the Rice Road right-of-way and disturbed, undeveloped land north of Olive Avenue. On the south side of Salt Creek, an approximately 8,000 square feet temporary work area may be required for HDD and open trench work. The work area is a trapezoidal-shaped area approximately 80 feet wide with sides that are 213 feet and 152 feet long, and is comprised of paved road and non-paved road shoulder.

For the pipeline crossing of Salt Creek using Option 2: Microtunneling, an approximately 15,000 square feet temporary area may be required for microtunneling and open trench work, located on the north side of Salt Creek. The launch shaft temporary work area is approximately 80 feet by 224 feet long and is comprised of paved road, non-paved shoulders, and a concrete lined v-ditch. On the south side of Salt Creek, an approximately 8,000 square feet temporary work area may be required for microtunneling and open trench work. The reception shaft work area is a trapezoidal-shaped area approximately 80 feet wide with sides that are 213 feet and 152 feet long, and is comprised of paved road and non-paved road shoulder.

1.3 Regulatory Summary

Regulated or sensitive resources studied and analyzed herein include special status plant and wildlife species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement, regionally protected resources (e.g., from county-wide Habitat Conservation Plans [HCPs] and Natural Community Conservation Plans [NCCPs]), and locally protected resources, such as protected trees. Regulatory authority over biological resources is shared by Federal, State, and local authorities. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions (in this instance, the community of Winchester and the RCFC&WCD).

1.3.1 Definition of Special Status Species

For the purposes of this report, special status species include:

- Species listed as threatened or endangered under the federal Endangered Species Act (ESA); including proposed and candidate species
- Species listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA)
- Species designated as Fully Protected by the California Fish and Game Code (CFGC), and Species of Special Concern or Watch List by the California Department of Fish and Wildlife (CDFW)
- Native Plant Protection Act (NPPA) – State Rare (SR)
- California Native Plant Society (CNPS) California Rare Plant Ranks (CRPR) 1A, 1B, 2A and 2B
- Species designated as locally important by the Local Agency and/or otherwise protected through ordinance, local policy, or HCPs/NCCPs

1.3.2 Environmental Statutes

Portions of the project's temporary construction work area could be outside of the existing Rice Road right-of-way within Salt Creek, in RCFC&WCD land designated PQP under the MSHCP. The MSHCP was developed by Riverside County to aid in maintaining biological and ecological diversity within the region, while addressing requirements of the California Endangered Species Act and Federal Endangered Species Act. The MSHCP is overseen by the Regional Conservation Authority, in coordination with CDFW and U.S. Fish and Wildlife Service (USFWS). The MSHCP describes a conceptual Reserve system that includes existing and proposed Cores, Linkages, and Non-contiguous Habitat Blocks to accommodate the needs of plant and wildlife species. The MSHCP was adopted in 2003, and associated permits were issued in 2004. PQP lands are lands that were already protected as open space prior to the MSHCP's inception in 2004. EMWD is not a signatory to the MSHCP.

For the purpose of this report, potential impacts to biological resources were analyzed based on the following statutes (Appendix A):

- CEQA
- ESA
- CESA
- Federal Clean Water Act (CWA)
- CFGC
- Migratory Bird Treaty Act (MBTA)
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act (PCWQCA)
- MSHCP[1]

1.3.3 Guidelines for Determining CEQA Significance

The following threshold criteria, as defined by the CEQA Guidelines Appendix G Initial Study Checklist, were used to evaluate potential environmental effects. Based on these criteria, the proposed project would have a significant effect on biological resources if it would:

a) *Have substantial adverse effects, 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, and 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.*

[1] While technically not a standalone statute, projects proposed within the MSHCP area are required to consider this Plan when performing environmental analyses. MSHCP Permittees are required to be consistent with this Plan. Non-Permittees are not required to demonstrate consistency; however, pursuant to CEQA, non-Permittee projects cannot conflict with a regional habitat conservation plan.

2 Methodology

Biological conditions within the project site were evaluated by confirming applicable biological regulations, policies, and standards; reviewing biological literature and querying available databases pertinent to the project site and vicinity; and conducting a reconnaissance-level biological survey of the project site. The methods employed are described in detail below. The findings and opinions conveyed in this report are based on this methodology; therefore, all quantitative impact assumptions are estimates.

2.1 Biological Study Area

Rincon biologist, Genelle Watkins, conducted the survey within the Biological Study Area (BSA) defined for this project as the approximately 2.30-acre/0.30-linear mile project area, plus a 100-foot survey buffer from project components. The project disturbance area where proposed construction activities will occur is defined as the temporary and permanent impact areas of the project. The BSA also includes two proposed temporary work areas, also including 100-foot buffers (Figure 2). The BSA is approximately 7.69 acres in total area. The northern portion of the BSA includes Olive Avenue, partially paved Rice Road containing the temporary staging area, excavation pit, proposed microtunneling, and recycled water (RW) connections along Rice Road and within Salt Creek. The southern portion of the BSA includes the additional temporary work area off Western Hills Drive, along with the proposed microtunneling and RW connection. Most of the project disturbance area appears to be subject to ongoing mowing.

2.2 Literature Review

Rincon conducted a literature review to characterize the nature and extent of biological resources on and adjacent to the BSA. The literature review included an evaluation of current and historical aerial photographs of the site (Google Earth 2025), regional and site-specific topographic maps, and climatic data.

Queries of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation system (IPaC; UFWS 2025b), CDFW California Natural Diversity Database (CNDDB; CDFW 2025b), and California Native Plant Society (CNPS) online Inventory of Rare and Endangered Plants of California (2025a) were conducted to obtain comprehensive information regarding State and Federally listed species, and other special status species, considered to have potential to occur within the *Winchester, California* USGS 7.5-minute topographic quadrangle and the surrounding eight quadrangles (*Perris, San Jacinto, Lakeview, Romoland, Hemet, Murrieta, Sage, and Bachelor Mountain*). The results of database queries and lists of special status species were reviewed by Rincon's regional biological experts for accuracy and completeness. The final list of special status biological resources (species and sensitive natural communities) was evaluated based on documented occurrences within the nine-quadrangle search area and biologists' expert opinions on species known to occur in the region. The evaluation results and justification were compiled into a table (Appendix B).

The following resources were reviewed for additional information on existing conditions relating to biological resources within the BSA:

- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey (2025b)
- USFWS Critical Habitat Portal (2025a)
- USFWS Information for Planning and Consultation (2025b)
- CDFW Biogeographic Information and Observation System (BIOS, CDFW 2025a)
- CDFW Special Animals List (2025a)
- CDFW Special Vascular Plants, Bryophytes, and Lichens List (2025b)
- Multiple Species Habitat Conservation Plan Regional Conservation Authority (2025)
- National Hydrography Dataset (NHD, USGS 2025)
- National Wetlands Inventory (NWI, USFWS 2025c)

The vegetation community characterizations for this analysis are based on the classification systems presented in *A Manual of California Vegetation, Second Edition* (MCV2; Sawyer et al. 2009). The land cover types that are not described in MCV2 are classified using conventional naming practices (e.g., disturbed/developed). Additionally, some vegetation communities not recognized by the MCV2 are described using MSHCP guidelines.

The potential for wildlife movement corridors was evaluated based on the California Essential Habitat Connectivity Project commissioned by the California Department of Transportation and CDFW (Spencer et al. 2010).

2.3 Field Reconnaissance Survey

Rincon Biologist, Genelle Watkins, conducted a field survey on January 21, 2025, between 0700 and 1030 to document existing conditions of the BSA. Wind conditions during the survey were calm, with temperatures between 30 degrees and 58 degrees Fahrenheit and zero percent cloud cover. All accessible portions of the BSA were surveyed on foot. Inaccessible areas included fenced and developed residential communities along the northwestern, southwestern, and southeastern portions of the BSA, along Rice Road. The inaccessibility of these areas did not affect the biologists' ability to complete a thorough survey. The biologist mapped vegetation communities and land cover types and noted all observations of wildlife and plant species. The survey was conducted outside of the typical bird nesting season (February 1 through August 31).

3 Existing Conditions

Site conditions and physical characteristics are described below. Appendix C contains representative photographs of the BSA taken during the field reconnaissance survey.

3.1 Physical Characteristics

3.1.1 Topography and Geography

The BSA is in developed and undeveloped areas of Winchester, California. The majority of the BSA is relatively flat with elevations ranging from 1,453 to 1,473 feet above mean sea level (amsl). Patches of the BSA are along eroded trails. The BSA is approximately 1.8 miles northwest of Diamond Valley Lake and approximately 4.86 miles northwest of the Rawson Mountains.

The majority of the BSA is unpaved and traverses sparsely paved and dirt access roads. Evidence of human disturbance, including trash, recent mowing, vegetation clearance, and vehicle traversing (tire tracks) was present throughout the BSA, primarily within the reaches of Salt Creek. The center of the BSA has rip rap piled on either side of the unpaved portions of Rice Road. The two temporary work areas are on the paved portions of Rice Road, adjacent to residential communities and ornamental landscaping. The BSA along Olive Avenue is primarily undeveloped and disturbed, while the BSA on either side of Rice Road has been cleared of vegetation, and also contains pedestrian and vehicular dirt access roads, visible trash, and debris.

3.1.2 Watershed and Drainages

The BSA is within the San Jacinto River Watershed (Hydrologic Unit Code [HUC] 12-180702020306). The NWI identifies Salt Creek (R4SBA) that flows from Aqueduct Road west to Salt Creek Road within the BSA (USFWS 2025c). This assessment was confirmed by observations from the reconnaissance survey. A singular dry drainage conveys flow through a culvert within the BSA. Section 4.3, Jurisdictional Waters and Wetlands, describes these drainages in detail.

3.1.3 Soils

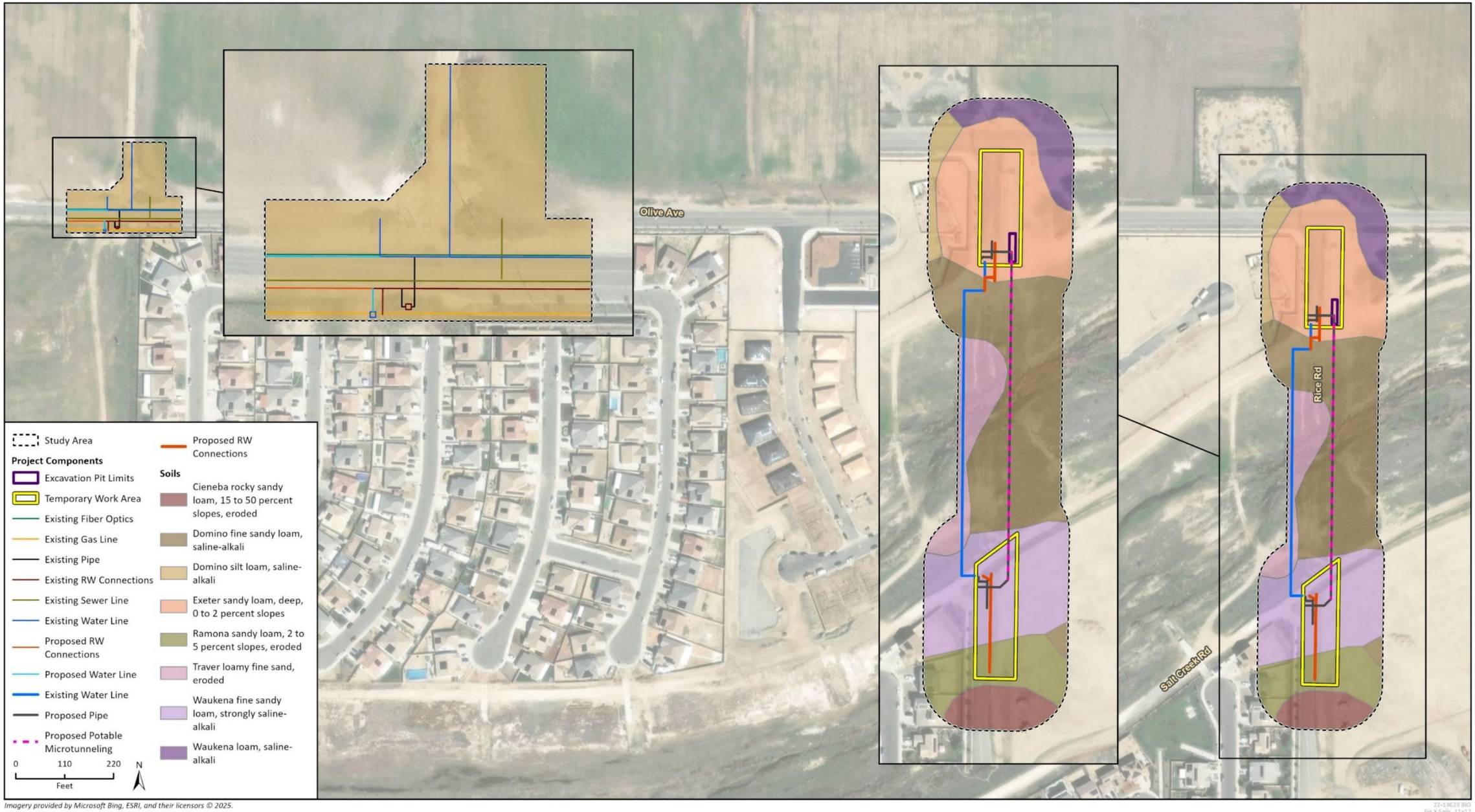
Eight soil types in five soil series are present in the BSA (Figure 3): Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded; Domino fine sandy loam, saline-alkali; domino silt loam, saline-alkali; Exeter sandy loam, deep, 0 to 2 percent slopes; Ramona sandy loam, 2 to 5 percent slopes, eroded; Traver loamy fine sand, eroded; Waukena fine sandy loam, strongly saline-alkali; Waukena loam, saline-alkali (USDA NRCS 2025b).

Cieneba Soil Series

The Cieneba series consists of very shallow and shallow, somewhat excessively drained gravelly loam soils that formed in material weathered from granitic rock. Cieneba soils are on hills and mountains and have slopes of 9 to 85 percent.

The typical profile of the Cieneba soil series is as follows: partially decomposed leaf and twig litter from 0 to 0.5 inches, fine, brown, moist gravelly loam from 0.5 to 10 inches, and reddish yellow to brown, strongly weathered granitic material from 10 to 30 inches (USDA NRCS 2025a).

Figure 3 Soils



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Additional data provided by USDA, NRCS, SSURGO, 2024.

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Domino Soil Series

The Domino series consists of moderately deep, moderately well drained soils that are formed in alluvial fans derived from granite. Domino soils are found on nearly level basin areas and toes of alluvial fans of 1,000 to 1,800 feet, with slopes of up to two percent. The soils are moderately alkaline, and the typical profile of the Domino series soils is as follows: grayish brown to dark grayish brown or pale brown, silt loam sandy loam from 0 to 14 inches, heavy silt loam 14 to 22 inches, light silty clay loam 22 to 27 inches, and dark grayish brown, strongly cemented caliche from 27to 36 inches (USDA NRCS 2025a).

Exeter Soil Series

The Exeter series consists of moderately deep to a duripan, moderately well drained loam soils that formed in alluvium mainly from granitic sources. Exeter soils are on alluvial fans and stream terraces and have slopes of zero to nine percent. The typical profiles of the Exeter soil series is as follows: brown to dark brown loam from 0 to seven inches, moist, dark yellowish brown loam from seven to 14 inches, reddish brown to yellowish red clay loam from 20 to 30 inches, reddish brown duripan from 30 to 43 inches, and light yellowish brown, moderately alkaline, gravelly sand from 43 to 60 inches (USDA NRCS 2025a).

Ramona Soil Series

The Ramona series is a member of the fine-loamy, mixed, thermic family of Typic Haploxeralfs. This soil series is well drained, with slow to rapid runoff, and moderately slow permeability. The typical profile of the Ramona soil series is as follows: brown to dark brown sandy loam from zero to 14 inches, brown, fine sandy loam from 14 to 23 inches, dark reddish brown loam from 23 to 29 inches, reddish brown to yellowish red sandy clay loam from 29 to 68 inches, and brown to dark brown, fine sandy loam from 68 to 74 inches (USDA NRCS 2025a).

Traver Soil Series

The Traver series consists of coarse-loamy, mixed soils that are a part of the thermic family of Natric Haploxeralfs. The soils are derived from granitic bedrock. Traver soils are moderately well to somewhat poorly drained. The typical profiles of the Traver soil series are as follows: gray, light brownish gray, fine sandy loam, from zero to 38 inches, very pale brown, fine loam sandy to silt loam from 38 inches and above. The pH of these soils increases with depth (USDA NRCS 2025a).

Waukena Soil Series

The Waukena series consists of moderately well to somewhat poorly drained soils. The soils vary in content of salts, alkali and lime, with the lime usually decreasing with depth. They become less alkaline and calcareous with depth. They may have medium to large lime concretions. Waukena soils occur on level basin-like areas in valley plains with slightly irregular or hummocky surface, and on slopes of zero to one percent with a mound microrelief under salt-tolerant grasses. The typical profile of the Waukena series soils is as follows: light gray to gray, fine sandy loam from zero to 10 inches, and light yellowish brown, sandy clay loam and clay loam from 10 to 60 inches (USDA NRCS 2025a).

3.2 Vegetation and Other Land Cover

A total of three vegetation communities and land cover types were documented within the BSA during the field survey. Table 2 identifies each vegetation community and land cover type, as well as approximate acreage and percentage of BSA covered. Figure 4 depicts the locations of each vegetation community and land cover type in the BSA. Brief descriptions of the vegetation communities and land cover types are provided in the subsections below and representative photographs are provided in Appendix C. Additionally, a compendium of flora and fauna identified within the BSA is provided in Appendix D.

Table 2 Summary of Vegetation Communities/Land Cover Types within the BSA

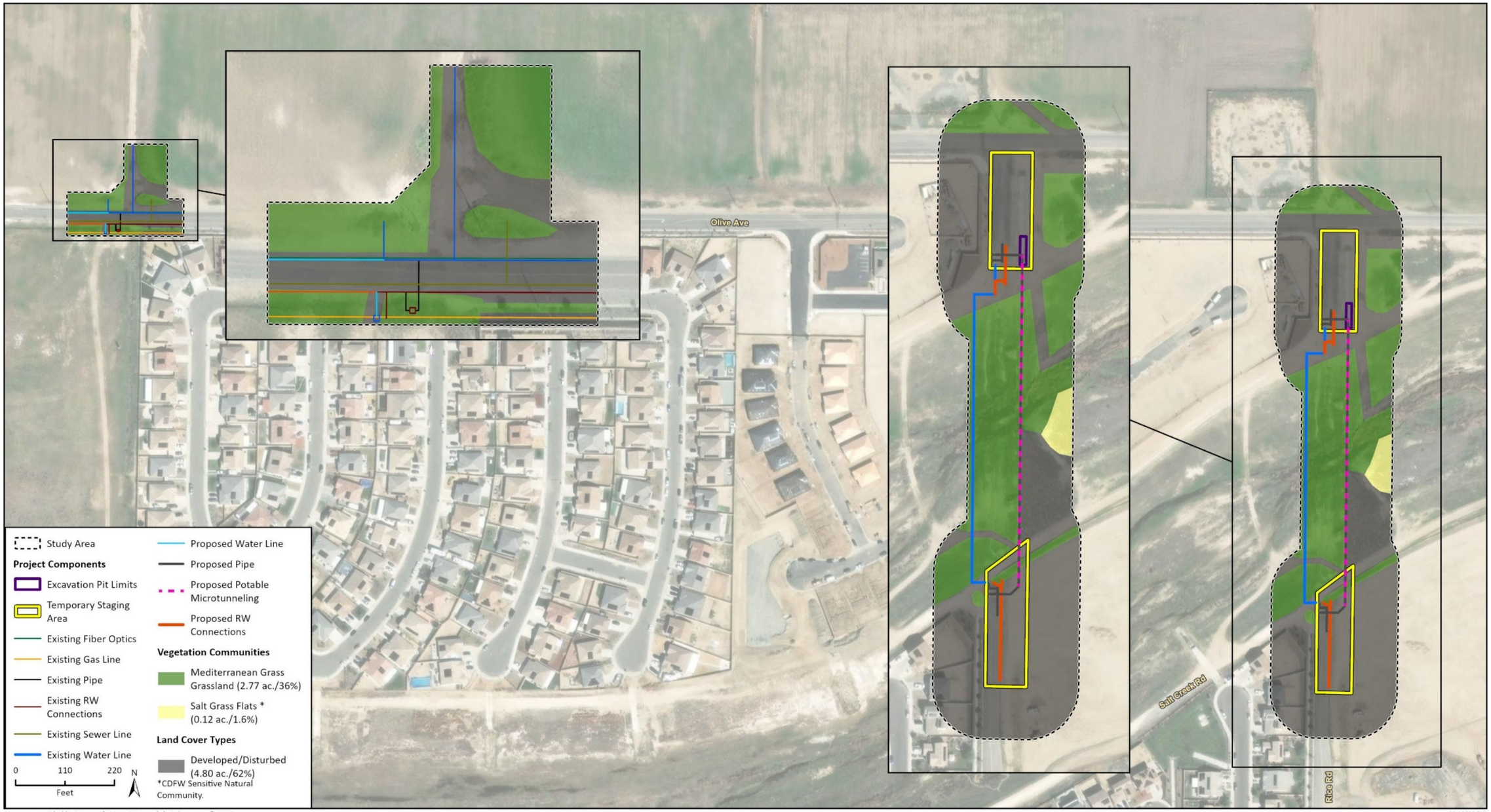
Type	Approximate Acreage	Approximate Percent Area of BSA
Disturbed/Developed	4.8	62
Mediterranean grass grassland	2.77	36
Salt grass flats	0.12	2
Total	**7.69**	**100%**

3.2.1 Disturbed/Developed

Approximately 4.8 acres of the BSA is disturbed/developed land, making up 62 percent of the total land cover in the BSA. Disturbed land refers to any land where the native vegetation has been significantly altered by agriculture, construction, or other anthropogenic activities; and the species composition and site conditions are not characteristic of the disturbed phase of a particular vegetation community (e.g., disturbed Mediterranean grass grassland). Disturbed land is typically found in vacant lots, roadsides, material storage areas, or abandoned fields, and is often dominated by non-native species and/or bare ground. This land cover type is found throughout the BSA along Rice Road, and in the central portion of the BSA, adjacent to Salt Creek. These areas are characterized by mostly bare ground with scattered non-native and native forbs such as foxtail chess (*Bromus madritensis*), short-pod mustard (*Hirschfeldia incana*), black mustard (*Brassica nigra*), stinknet (*Oncosiphon pilulifer*), and Russian thistle (*Salsola tragus*), depending on location.

The developed land cover type consists of areas that have been developed or otherwise physically altered to the extent that they no longer support most vegetation. Developed land is characterized by the presence of permanent or semi-permanent structures, gravel lots, pavement, or hardscape. The landscaped land cover type consists of human-altered vegetative landscapes for aesthetic or recreational purposes that are typically adjacent to developed areas. This land cover type is located within the developed rural areas at the northwestern and southern end of the BSA on Rice Road (private residences and paved asphalt roads). It contains structures, hardscapes, and adjacent landscape/ornamental vegetation. The ornamental species composition varied but was generally included ornamental Peruvian pepper (*Schinus molle*) trees. Disturbed/developed is not officially identified in MCV2 (Sawyer et al. 2009).

Figure 4 Vegetation Communities and Land Cover Types



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3.2.2 Mediterranean Grass Grassland

Mediterranean grass grassland (*Bromus rubens—Schismus (arabicus, barbatus) Herbaceous Semi-Natural Alliance*) consists of a dense herbaceous layer comprised of primarily non-native grasses and forbs. Dominant herbaceous species include red brome (*Bromus rubens*), ripgut brome (*Bromus diandrus*), wild oats (*Avena* spp.), yellow sweetclover (*Melilotus indicus*), black mustard, tocalote (*Centaurea melitensis*), redstem filaree (*Erodium cicutarium*), telegraph weed (*Heterotheca grandiflora*), and rattail fescue (*Festuca myuros*). Other less commonly encountered species include chaparral nightshade (*Solanum xanti*), California sagebrush (*Artemisia californica*), and tree tobacco (*Nicotiana glauca*). This vegetation community is not considered sensitive by the CDFW (2025c).

This vegetation community comprises 2.77 acres of the BSA and is found along the developed/disturbed areas of the BSA, and adjacent to the salt grass flats vegetation community along Salt Creek. Additionally, this vegetation community is located on the north and south sides of Rice Road, specifically along the dirt access roads of the BSA, including the roads along Olive Avenue and the dirt access roads adjacent to Salt Creek Road. It is dominated by non-native vegetation such as foxtail chess, short-pod mustard, black mustard, and limited emergent native vegetation including telegraph weed, coyote brush (*Baccharis pilularis*), and California buckwheat (*Eriogonum fasciculatum*). Actively managed riparian vegetation, such as cattail (*Typha* sp.) and Goodding's black willow (*Salix gooddingii*), is included in this vegetation community and is associated with Salt Creek.

3.2.3 Salt Grass Flats

Salt grass flats (*Distichlis spicata* Herbaceous Alliance) are present along Salt Creek in the eastern portion of the BSA, totaling 0.12 acre. This vegetation community generally contains salt grass (*Distichlis spicata*) at 30 to 50 percent relative cover in the herbaceous layer. This vegetation community is commonly found in coastal marshes as well as inland habitats such as playas, swales, and terraces along washes that are intermittently flooded. This community is recognized in the MCV2 and is recently listed as a sensitive natural community (CDFW 2025c; Sawyer et al. 2009).

3.3 General Wildlife

Common bird species observed during the field survey include American crow (*Corvus brachyrhynchos*), red-tailed hawk (*Buteo jamaicensis*), Anna's hummingbird (*Calypte anna*), white-crowned sparrow (*Zonotrichia leucophrys*), and Cooper's hawk (*Accipiter cooperii*). Additionally, the Disturbed/Developed rocky areas along the center of the project site contained suitable habitat to support small mammals.

4 Sensitive Biological Resources

This section discusses special status species and sensitive biological resources observed in the BSA and evaluates the potential for the project site to support additional sensitive biological resources.

4.1 Special Status Species

Assessments for the potential occurrence of special status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDB and other sources, species occurrence records from other sites in the vicinity of the BSA, previous reports for the project site, and the results of surveys of the project site. The potential for each special status species to occur in the BSA was evaluated according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on the site if present (e.g., oak [*Quercus* sp.] trees). Species is not present in the vicinity of the site.
- **Low Potential.** Few of the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species may occur in the region but is not very likely to be found on the site.
- **Moderate Potential**. Some of the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species is known to occur in the regional vicinity and has a moderate probability of being found on the site.
- **High Potential.** All the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has been recently documented in the vicinity and has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (e.g., CNDDB, other reports) on the site recently (within the last five years).

The literature and database review identified special status plant and wildlife species in the nine-quadrangle search area. Of these, four species (one plant and three wildlife species) are considered to have a moderate potential to occur in the broader BSA. However, none of these species has a moderate potential to occur in the project disturbance area. One special status wildlife species was present in the BSA during the field reconnaissance survey (Table 3).

Table 3 Special Status Species with Potential to Occur in the BSA and Project Area

Scientific Name	Common Name	Status[1]	Potential habitat in BSA	Potential to Occur (BSA)	Potential to Occur (Project Disturbance Area)
Plants					
Centromadia pungens ssp. *laevis*	smooth tarplant	CRPR 1B.1	Suitable soil type is present within the BSA; species known to occur in heavily disturbed areas; occurrences identified in 2013	Moderate	Low
Invertebrates					
Bombus crotchii	Crotch's bumble bee	SCE	Foraging habitat and species' food sources is not present in the project disturbance area, but is present in limited quantities throughout the BSA. Additionally, for nesting, the species may utilize small mammal burrows present within the BSA	Moderate	Low
Bombus pensylvanicus	American bumble bee	WL	Foraging habitat present in non-native thistle vegetation throughout the BSA. The queen may utilize small mammal burrows present within the BSA for overwintering	Moderate	Low
Birds					
Accipiter cooperii	Cooper's hawk	WL	Open areas throughout the BSA	Present Low nesting potential; High foraging potential	Low
Athene cunicularia	burrowing owl	SSC/SCE	Disturbed habitat, rodent dens in rocky substrate along Rice Road (but not within project disturbance area), and open pipe culvert (but not suitable for nesting)	Moderate	Low, adjacent to the project disturbance area
Vireo bellii pusillus	Least Bell's vireo	FE/SE	Marginally suitable habitat within actively managed Mediterranean grass grassland along Salt Creek	Low	No potential
Mammals					
Dipodomys stephensi	Stephen's kangaroo rat	FT/ST	Suitable soil types and marginal flood plain habitat exists to support species burrows; occurrence identified within the last 10 years, less than 1.5 miles from the BSA	Moderate	Low

[1]FE = Federally Endangered FT = Federally Threatened SCE = State Candidate Endangered SE = State Endangered ST = State Threatened
SSC = CDFW Species of Special Concern
WL = CDFW Watch List
1B = Rare, Threatened, or Endangered in California and elsewhere
2B= Rare, Threatened, or Endangered in California, but more common elsewhere

Additionally, the BSA is located within a MSCHP Narrow Endemic Plant Species Survey Area for six special status plant species: Munz's onion (*Allium munzii*), California Orcutt grass (*Orcuttia californica*), San Diego ambrosia (*Ambrosia pumila*), spreading navarretia (*Navarretia fossalis*), Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*), and many-stemmed dudleya (*Dudleya multicaulis*). However, a combination of the heavily disturbed, actively managed vegetation communities and land cover types described above throughout the BSA limits these species' potential for occurrence within the undeveloped portions of the BSA; therefore, these six species are not anticipated to occur within the BSA. These species are included in Appendix B, but are not discussed further in this report.

4.1.1 Special Status Plant Species

The actively managed mediterranean grassland and salt grass flats vegetation communities within several sections of the BSA are characterized by high non-native grasses and highly disturbed vegetation, with soil types suitable to support special status plant species. One special status plant species is considered to have a moderate potential to occur in portions of the BSA based on the presence of potentially suitable habitat, as described in detail below.

Smooth Tarplant

Smooth tarplant (*Centromadia pungens* ssp*. laevis*), a CRPR 1B.1 species, is an annual herb found in chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland. This species prefers alkaline soils and occurs from sea level to 2,100 feet amsl. Highly disturbed grassland habitat is present throughout the BSA, particularly in areas adjacent to the excavation pits and temporary work areas. Additionally, the BSA is within the species' documented geographic and elevational range. Saline-alkali soils are present within the BSA and overlap portions of the actively maintained riparian areas. Two occurrences of this species were recorded within the BSA (2013), while several were recorded in the nine-quadrangle search area, including several recent (2013) occurrences within less than one mile of the BSA. The BSA is actively managed and undergoes routine mowing; therefore, this species has moderate potential to occur within the Mediterranean grass grassland vegetation community in the BSA. However, this species would have low potential to occur in the project disturbance area.

4.1.2 Special Status Wildlife Species

Four special status wildlife species are considered to either be present or have a moderate potential to occur in portions of the BSA based on the presence of potentially suitable habitat, as described in detail below. However, none of these species has a moderate potential to occur in the project disturbance area. Only one species has a moderate potential to occur within or adjacent to the project disturbance area. Three of the listed species with a low potential to occur are described in this section solely due to their listed status.

Crotch's Bumble Bee

Crotch's bumble bee (*Bombus crotchii*), a CESA candidate species, inhabits grassland and scrub habitats in arid climates from coastal California east to the Sierra-Cascade Crest and south into Mexico. It is a subterranean nester and has been documented to frequently nest in abandoned rodent dens. It visits a wide range of host plants and is therefore considered a dietary generalist.

Though plant food genera are present in very limited quantities within the Mediterranean grass grassland communities within the BSA, the non-native vegetation provides potentially suitable

habitat throughout the BSA to support species occurrence. The BSA is within this species' documented geographic and elevational range. Rodent dens, including a couple of visible small mammal burrows, are present in the BSA. Additionally, this species has been documented multiple times within the nine-quadrangle search area. While this species has a moderate potential to occur within the BSA, the project disturbance area lacks suitable habitat. Therefore, this species has a low potential to occur within or adjacent to the project disturbance area.

American Bumble Bee

American bumble bee (*Bombus pensylvanicus*), a CDFW Watch List species, forages on a wide variety of flowers including vetches (*Astragalus* spp.), clovers (*Melilotus* spp.), thistles, and sunflowers (*Helianthus* spp.). Their nests typically occur above ground under long grass or underground. Queens prefer overwintering in rotten wood or underground.

The BSA contains visible small mammal burrows that would be suitable for nesting and overwintering for queens. Additionally, patches of non-native long grasses exist within the Mediterranean grass grassland communities throughout the BSA. While this species has a moderate potential to occur within the BSA, the project disturbance area lacks suitable habitat. Therefore, this species has a low potential to occur within or adjacent to the project disturbance area.

Cooper's Hawk

Cooper's hawk (*Accipiter cooperii*), a CDFW Watch List species, is a yearlong resident of most of the wooded portion of California. Dense stands of live oak, riparian deciduous, and other forest habitats near water are used most frequently for nesting. The species often uses patchy woodlands and edges with snags for perching. It is frequently found within urban and suburban residential areas nesting in mature ornamental trees.

Heavily disturbed riparian vegetation is present within the BSA that could be used as perching for hunting, and the BSA is within the species' geographic and elevational range. This species was observed within the BSA, perching within a sparse cluster of mowed salt cedar (*Tamarix ramosissima*). However, this species has a low potential to occur within or adjacent to the project disturbance area.

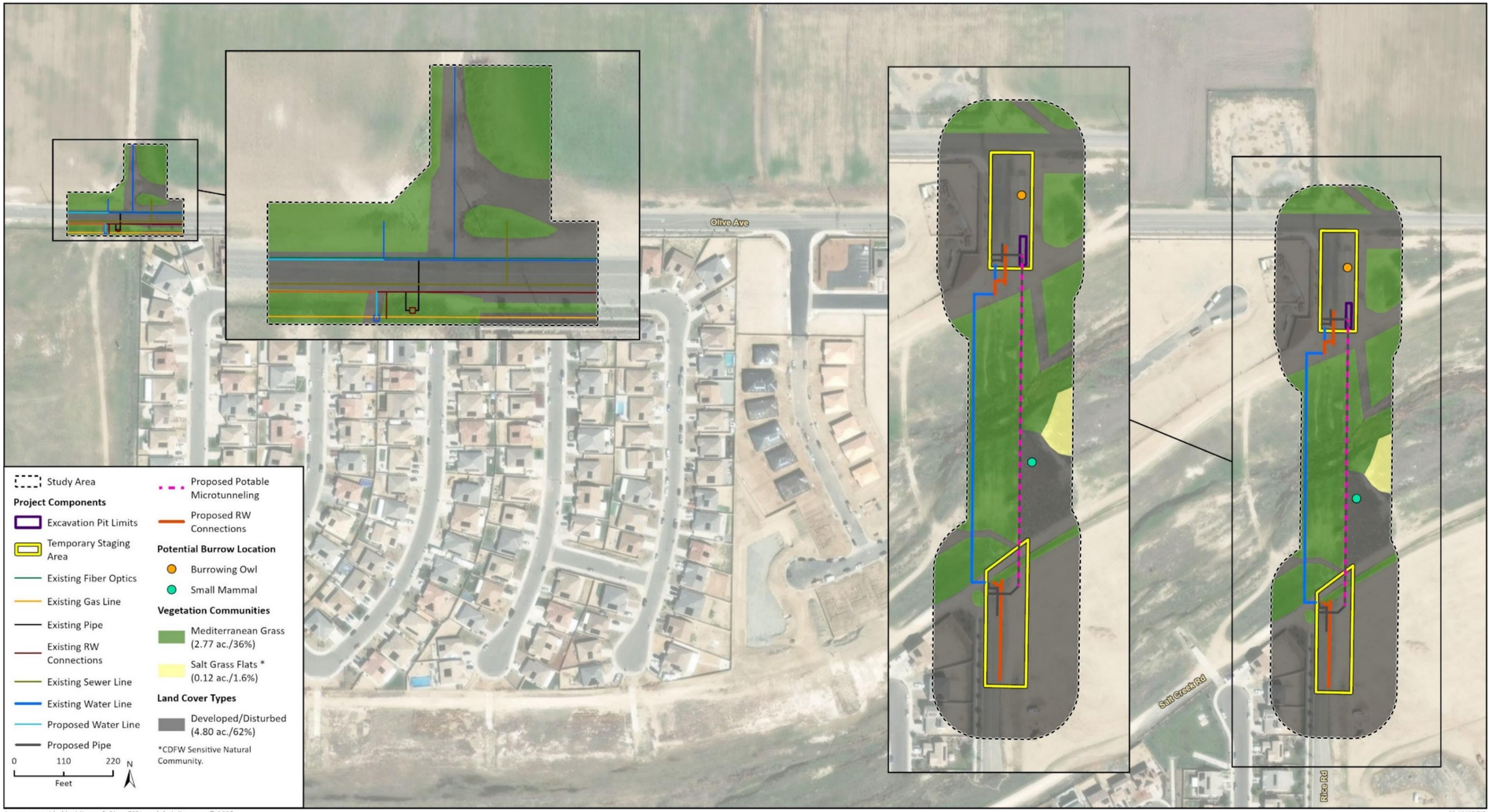
Burrowing Owl

Burrowing owl (*Athene cunicularia*), a State Candidate species, are yearlong residents of open, dry grasslands, sage scrub, and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. The species' populations have substantially decreased in recent decades. Burrowing owls use rodent and other small mammal burrows for roosting and nesting, commonly ground squirrel (*Otospermophilus* spp.) burrows.

Suitable small mammal burrows and a culvert that provides suitable nesting potential are present in both the BSA and project disturbance area, respectively (Figure 5). The BSA is within the species' documented geographic and elevational range. In addition, the BSA overlaps with an MSHCP-designated survey area for burrowing owl (RCA 2025). The species has been observed over 90 times in the nine-quadrangle search area, including several occurrences from the early 2000s less than one mile of the BSA. Therefore, this species has a moderate potential to occur within the disturbed habitat, disturbed grassland areas, and within the disturbed/developed rip rap throughout the center of the BSA, particularly near the small mammal burrows. This species may potentially seek shelter within the existing culvert on the western edge of Rice Road, north of Salt Creek; however, this species has a low potential to dwell and/or nest within the project disturbance area.

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Figure 5 Suitable Burrowing Owl and Small Mammal Burrow Locations



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Least Bell's Vireo

Least Bell's vireo (*Vireo bellii pusillus*), a Federally Endangered and CDFW State Endangered species, is a summer resident of southern California. They prefer low riparian vegetation in areas within the vicinity of water or in dry river bottoms. This species prefers nesting along margins of bushes or on twigs projecting into pathways, usually willow (*Salix* spp.), *Baccharis,* and/or mesquite (*Prosopis* spp.).

Marginal quality nesting riparian habitat exists within the BSA to support this species. Actively managed cattail/riparian willow habitat along the reaches of Salt Creek may provide limited habitat where species may fly over during the summer to assess nesting potential; however, given these areas are actively managed on an annual basis, it is not anticipated that this area would provide quality habitat for nesting and rearing young. Therefore, this species has low potential to occur within the BSA and within or adjacent to the project disturbance area and will not be discussed further in this report.

Stephen's Kangaroo Rat

Stephen's kangaroo rat (*Dipodomys stephensi*), a Federally and State Threatened species, is known to occur in western Riverside County and western and central San Diego County. The species occurs primarily in annual and perennial grassland habitats but may occur in coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas. The species' preferred food items are buckwheat (*Eriogonum* sp.), chamise (*Adenostoma fasciculatum*), brome grasses and filaree (*Erodium* sp.).

Highly disturbed habitat is present throughout the BSA, and includes brome and salt grasses along Salt Creek, and on the eastern and western sides of Rice Road. This species had one occurrence less than 0.5-mile northwest of the BSA in 1990; however, over 50 percent of the site contains disturbed/developed and rocky areas that do not support the species. Therefore, this species has a low potential to occur within the disturbed areas located throughout the BSA. Due to a lack of suitable habitat, this species also has a low potential to occur within or adjacent to the project disturbance area.

Additionally, the BSA is also within the Stephen's Kangaroo Rat Mitigation Fee area; however, EMWD is not a signatory to the SKR HCP and payment of such fees is not required of non-participating agencies. Furthermore, the project is not expected to result in impacts to Stephens' kangaroo rat due to a lack of suitable habitat. The site is too rocky and mountainous to support this species. Therefore, the project would not conflict with the SKR HCP.

4.1.3 Nesting Birds

The BSA contains habitat that can support nesting birds, including raptors, protected under CFGC Section 3503 and the MBTA (16 United States Code Sections 703–712). Due to recent vegetation removal and maintenance, limited suitable nesting bird habitat exists within the BSA. However, potential nesting habitat includes the ornamental trees, disturbed riparian vegetation, boulders, burrowing mammal complexes for burrowing owl, and adjacent residential buildings.

4.2 Sensitive Natural Communities and Critical Habitat

Vegetation communities are considered sensitive biological resources if they have limited distributions, have high-wildlife value, include special status species, or are particularly susceptible to disturbance. The CDFW ranks natural and sensitive communities using NatureServe's Heritage

Methodology, the same system used to assign global and state rarity ranks for plant and animal species in the CNDDB. Salt grass flats is the singular sensitive natural community that exists within the BSA, further discussed in Section 5.3.

4.3 Jurisdictional Waters and Wetlands

Potential federal and state jurisdictional features within the BSA include Salt Creek that conveys flows perpendicular to the BSA (Figure 6). Additionally, one dry drainage that conveys flows through a concrete v-ditch culvert is located in the northern part of the BSA, along Rice Road's eastern edge.

Salt Creek likely meets the United States Army Corps of Engineers (USACE) definition of a relatively permanent water (i.e., contains flow for at least three months out of the year) and has a direct surface connection to Canyon Lake (a Traditional Navigable Water (TNW) under Section 404 of the CWA. However, the concrete v-ditch is not likely USACE-jurisdictional waters of the U.S. because it is an ephemeral drainage and is not a relatively permanent water. However, both Salt Creek and the concrete v-ditch within the BSA potentially fall under the jurisdiction of the Santa Ana RWQCB as waters of the State per the PCWQCA, which defines waters of the State as all surface waters within the boundaries of the State, and CDFW as streambeds per Section 1602 of the CFGC.

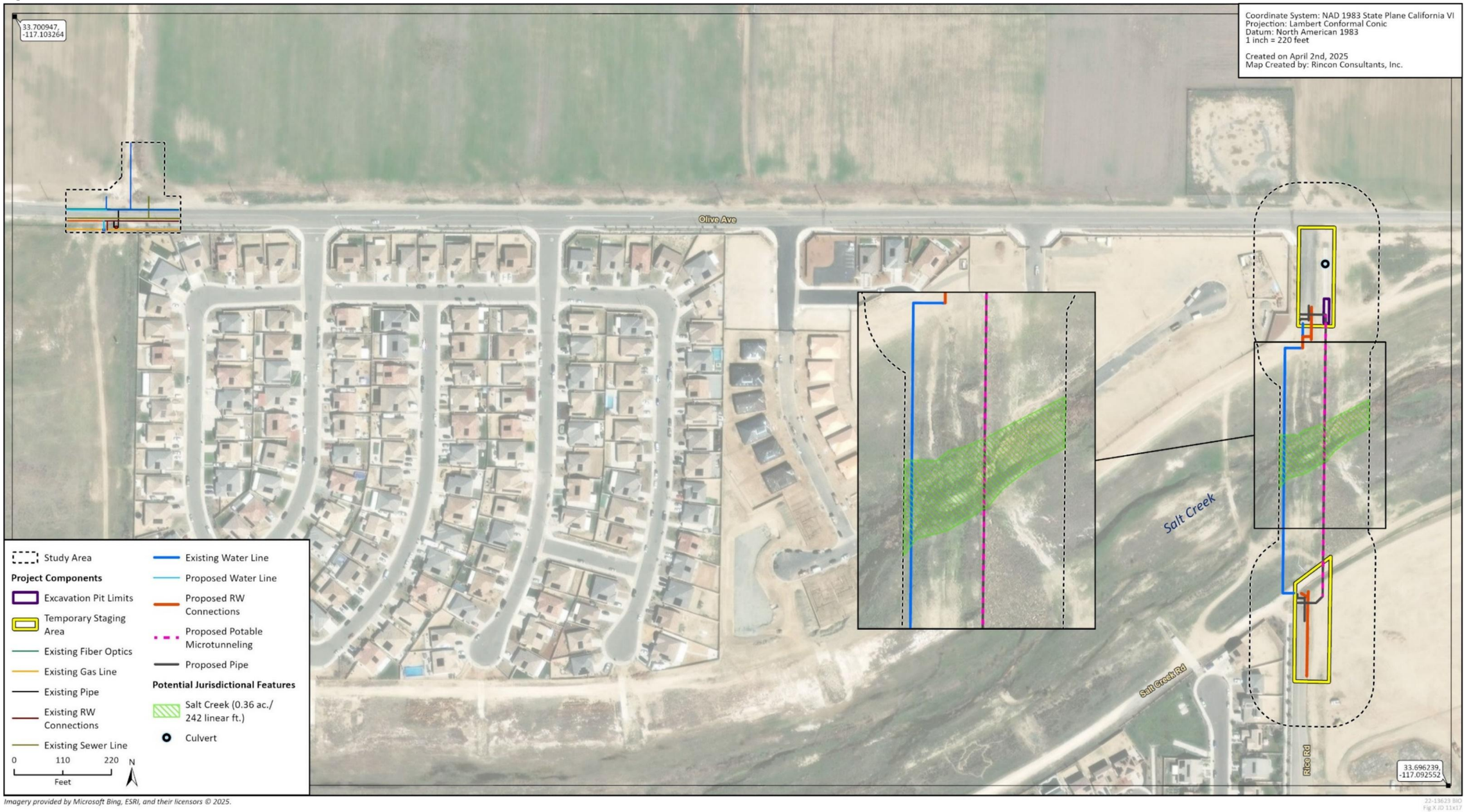
4.4 Wildlife Movement

Wildlife corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as between foraging and denning areas, or they may be regional in nature, allowing movement across the landscape. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

The habitats in the linkage do not necessarily need to be the same as the habitats that are being linked. Rather, the linkage merely needs to contain sufficient cover and forage to allow temporary inhabitation by ground-dwelling species. Typically, habitat linkages are contiguous strips of natural areas, though dense plantings of landscape vegetation would be used by certain disturbance-tolerant species. Depending upon the species using a corridor, specific physical resources (e.g., rock outcroppings, vernal pools, or oak trees) may need to be in the habitat link at certain intervals to allow slower-moving species to traverse the link. For highly mobile or aerial species, habitat linkages may be discontinuous patches of suitable resources spaced sufficiently close together to permit travel along a route in a short period of time.

The BSA does not contain areas of land considered "essential connectivity areas" identified by the Essential Habitat Connectivity Areas (EHCA) project (Spencer et al. 2010). Furthermore, the BSA is not located within the MSHCP Criteria Area, including any MSHCP-designated linkage or core area intended for wildlife movement. Portions of the BSA contain developed land, such as existing roadways, suburban residences, and heavily disturbed, partially vegetated areas that undergo maintenance and removal. This development may limit terrestrial wildlife movement through the BSA. The culverts along the eastern edge of Rice Road (Figure 6) may provide passages for terrestrial species, connecting the open spaces on either side of the highway, though much of the western side of the highway is also highly disturbed. The BSA likely supports a low level of local wildlife movement.

Figure 6 Potential Jurisdictional Features



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4.5 Resources Protected by Local Policies and Ordinances

4.5.1 Protected Trees

According to Chapter 12.24 of the Riverside County Municipal Code, any native trees at or above 12 inches in diameter at breast height (DBH) above grade and 30 feet in height shall be protected above 5,000 feet amsl (County of Riverside 2025). Native trees with a DBH of 12 inches or greater with a height of 30 feet or more are not present within the Study Area. Additionally, the BSA is below 5,000 feet amsl. Therefore, there are no protected trees within the Study Area per the Riverside County Municipal Code.

Chapter 12.08 of the Riverside County Municipal Code states that a permit must be acquired if any trees are removed or severely trimmed along a county highway. The BSA does not fall along a major highway as part of project activities; therefore, no permit is required.

4.6 Habitat Conservation Plans

The BSA lies within the boundaries of the MSHCP; however, EMWD is not a Permittee in the MSHCP.

The BSA falls within the MSHCP burrowing owl species survey area (RCA 2025). While EMWD is not a Permittee in the MSHCP and is not directly subject to MSHCP requirements, the presence of suitable burrowing habitat may also trigger focused burrowing owl surveys pursuant to the California Endangered Species Act. Additionally, margins of the BSA are located within PQP land associated with Salt Creek and owned by RCFC&WCD, immediately adjacent to the project site. PQP lands are part of the MSHCP Conservation Reserve, and any impacts to these conserved lands may result in additional requirements as determined by RCFC&WCD, the PQP landowner. None of the work that would encroach into the PQP lands would alter the functions and values of these lands. Project construction may occur outside of the Rice Road ROW and may temporarily impact PQP land. If temporary encroachment into land owned by RCFC&WCD, including PQP land, is anticipated, EMWD need an encroachment permit from RCFC&WCD. As a Permittee to the MSHCP, RCFC&WCD can convey third-party MSHCP take coverage to permit applicants and will determine any applicable requirements relative to the MSHCP prior to permit issuance, including any additional requirements to address temporary impacts to the PQP land and its associated functions and values. At a minimum, implementation of MSHCP, Volume I, Section 7.5.3 Construction Guidelines, as well as the Standard Best Management Practices provided in MSHCP, Volume I, Appendix C, may be required. Impacts to PQP land would also be immediately restored following construction.

Additionally, the BSA falls within the SKR HCP. However, EMWD is not a signatory to the SKR HCP and payment of the associated mitigation fee is not required of non-participating agencies.

5 Impact Analysis and Recommendations

This section discusses the potential adverse impacts to regulated biological resources that may occur from implementation of the project and provides recommendations for additional surveys and actions to further evaluate or avoid/minimize potential impacts.

5.1 Impact Evaluation

Impacts are defined as project-related activities that destroy, damage, alter, or otherwise affect biological resources. This may include injury or mortality to plant or wildlife species, effects on an animal's behavior (such as through harassment or frightening off an animal by construction noise), as well as the loss, modification, or disturbance of natural resources or habitats. Impacts are defined as either direct or indirect, and either permanent or temporary.

Direct impacts are generally those that occur during project implementation and at the same time and location as the cause of the impact. Direct impacts for this project may include injury, death, and/or harassment of special status wildlife species, if present in the work areas or vicinity. Direct impacts may also include the destruction of vegetation communities necessary for special status species breeding, feeding, or sheltering. Direct impacts to plants can include crushing of plants, bulbs, or seeds where present in the impact areas.

Indirect impacts are those that are reasonably foreseeable and caused by a project but occur later in time and/or potentially at locations of some distance from the source of the impact. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect impact. Specific examples for this project may include soil compaction that, in the future, following completion of the project, prevents wildlife from digging burrows or allows weedy plant species to thrive. Other examples may include dust that drifts outside of project disturbance areas and covers native plants, thereby decreasing their photosynthetic capacity, and unintentional introduction of invasive species (particularly weedy plant species that outcompete native plant species) that over time negatively affect the local ecology.

Permanent impacts are those that result in the long-term or irreversible loss of biological resources. For example, widening sewers in an existing sewer system would reduce the underground area available for wildlife to dig burrows.

Temporary impacts to biological resources are those that are reversible over time, with or without implementation of Mitigation Measures. Examples include the generation of fugitive dust and noise during project implementation, trimming or crushing vegetation that will regrow following project completion, and removed vegetation that will be actively restored. These temporary impacts are anticipated to last during project implementation and shortly thereafter. However, the biological resources are anticipated to return to baseline after project completion.

5.2 Special Status Species

The proposed project would have a significant effect on biological resources if it would:

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

5.2.1 Special Status Plant Species

One special status plant species, smooth tarplant, has a moderate potential to occur within the BSA, but would have low potential to occur in the project disturbance area. Direct impacts to special status plants are unlikely as the project impacts will be limited to existing paved and dirt roadways along either side of Rice Road to the north and south (Figure 7). In addition, the temporary work areas and excavation pits are heavily disturbed, lacking native vegetation and are not expected to support the special status species. In addition, most of the project disturbance areas appear to be subjected to ongoing mowing. Indirect impacts could occur if they are present within the BSA (but outside the project disturbance area) through habitat modification resulting from the introduction of invasive plants during project-related activities. Potential impacts to these species would be avoided and/or reduced through implementation of avoidance and minimization measure (AMM) BIO-5 through BIO-8, as described in Section 5.8 Avoidance and Minimization Measures below.

5.2.2 Special Status Wildlife Species

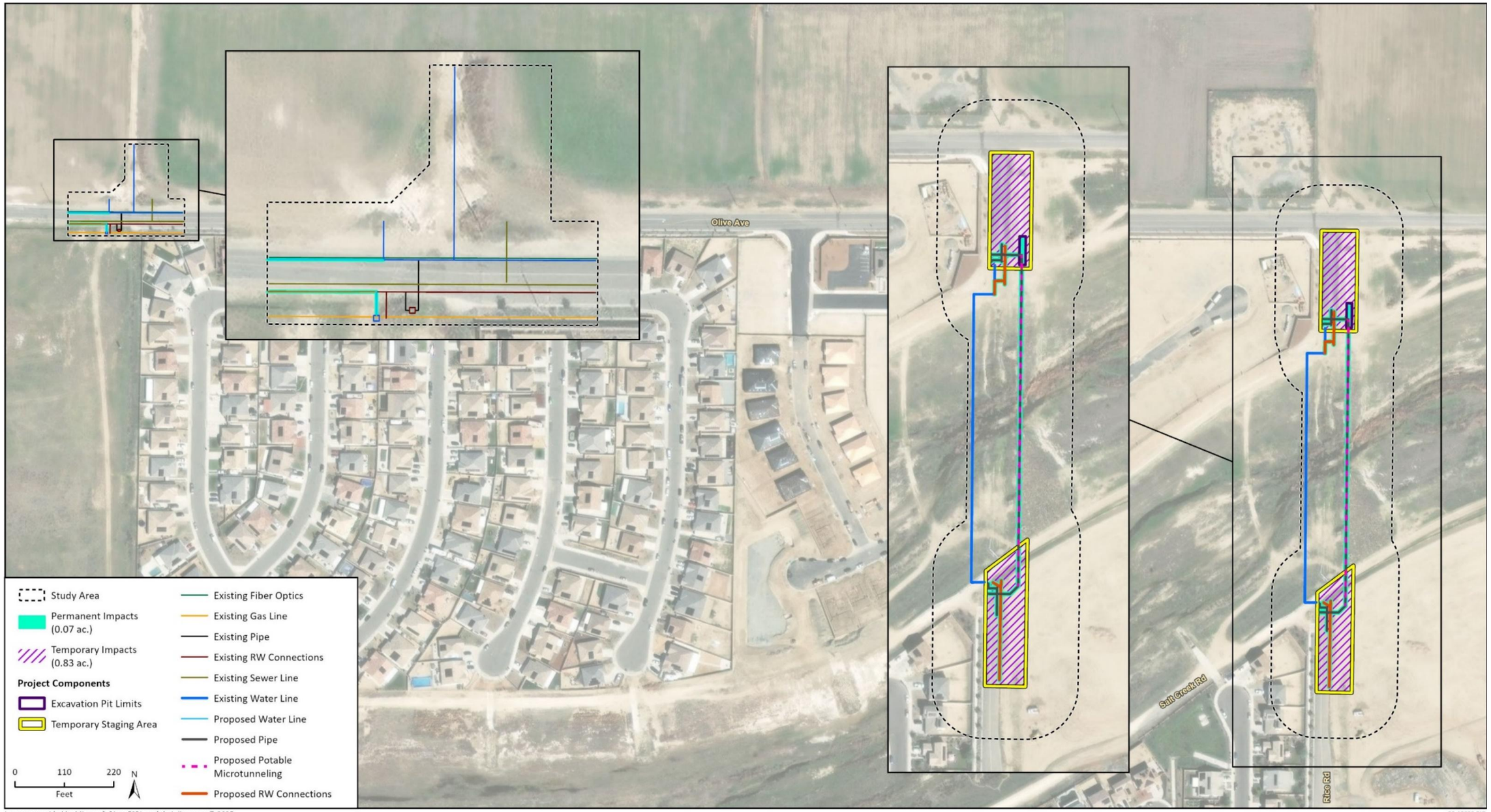
Four special status wildlife species are present or have a moderate potential to occur within the broader BSA. However, none of these species has a moderate potential to occur in the project disturbance area. Table 3 includes these species, their listing status, and their potential to occur. Direct impacts to these species are unlikely as the project impacts will be limited to existing paved and dirt roadways along either side of Rice Road to the north and south (Figure 7). Indirect impacts could occur to all special status wildlife species with the potential to occur due to noise and dust generation during heavy equipment operation and through habitat loss due to the introduction of invasive plants. Impacts would be avoided with implementation of AMMs BIO-5 through BIO-7.

Cooper's Hawk, a CDFW Watch List species, was present along the edges of Salt Creek in the BSA. Direct impacts to this species are unlikely as the project impacts will be limited to existing paved and dirt roadways along Rice Road, and staging areas are also disturbed/developed lands lacking native vegetation for this species to nest and/or forage. Indirect impacts could occur if project-related disturbances result in the vicinity of active nests in adjacent areas of the BSA. Impacts would be avoided with AMMs BIO-1, BIO-5, and BIO-7.

Indirect impacts to nesting birds could occur if active nests within the 100-foot buffer of the BSA are abandoned due to project-related disturbance. Impacts would be avoided with AMMs BIO-1, BIO-5, and BIO-7.

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Figure 7 Project Impacts



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22-13623 BIO
Fig X Project Impacts - 11x17

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Crotch's bumble bee, a CDFW State Candidate Endangered species, has low potential to occur in the project disturbance area. Direct impacts to this species are unlikely as the project disturbance area will be limited to existing paved and dirt roadways along Rice Road, and staging areas are also disturbed/developed lands lacking native vegetation. No potential host plants and no burrows that could support nest sites were observed in the road or staging areas during the reconnaissance survey. However, within the broader BSA, this geographic and elevational range for this species is documented, plant food genera are present, but in very limited quantities, the non-native vegetation provides potentially suitable habitat, and rodent dens are present. Indirect impacts, such habitat modification or bees abandoning nest burrows in areas adjacent to the project disturbance area, could occur if project-related disturbance extends outside of the project disturbance area.

Potential impacts to Crotch's bumble bee would be avoided through the implementation of AMMs BIO-3 through BIO-7, which requires biological construction survey and monitoring within and around the project disturbance area, to avoid direct take of Crotch's bumble bee. Details of additional general best management practices are described in Section 5.8.

American bumblebee, a CDFW Watch List Species, has a moderate potential to occur in the BSA. In addition, one recorded occurrence less than two miles from the BSA was recorded in the early 1940s. Direct impacts to this species in the project disturbance area are unlikely as the project impacts will be limited to existing paved and dirt roadways along Rice Road, and staging areas are also disturbed/developed lands lacking native vegetation. Indirect impacts could also occur if they are present within the project disturbance area through habitat modification resulting from the introduction of invasive plants during project-related activities and/or incidental encroachment of equipment from adjacent construction areas. Impacts to the American bumble bee would be avoided and/or reduced through the implementation of biological pre-construction survey and biological monitoring of the project area, worker environmental awareness training, invasive plant species control, and general best management practices as described in AMMs BIO-4 through BIO-7.

Burrowing owl is a CESA Candidate Endangered species. This species has a moderate potential to occur in the BSA, but low potential to occur in the project disturbance area. Ground squirrel burrow complexes, which burrowing owls use for nesting, are located in the disturbed/developed habitat along the dirt access roads in the BSA and potential burrow habitat within the culvert adjacent to Rice Road, although the culvert would not be suitable for nesting (Figure 5). Direct impacts to this species are not anticipated. Indirect project-related impacts to this species could occur if an active burrow is found during pre-construction surveys adjacent to the project disturbance area and the burrow is subsequently abandoned due to project-related disturbance. However, any potential impacts to burrowing owl would be fully avoided (directly and indirectly) through the implementation of AMMs BIO-2, BIO-4, BIO-5, and BIO-7. Furthermore, in the unlikely event that burrowing owl cannot be directly and indirectly avoided, EMWD would be required to obtain an Incidental Take Permit from CDFW, along with implementing compensatory mitigation.

Stephen's kangaroo rat, a federally and State Threatened species, has a moderate potential to occur in the BSA, but a low potential to occur and in the project disturbance area. Direct impacts to this species are unlikely as habitat within the project disturbance area is too rocky to support this species, and no burrows were observed in the road or staging areas during the reconnaissance survey. Indirect impacts could occur if adjacent project-related disturbances result in Stephen's kangaroo rats abandoning active burrows. Impacts would be avoided through the implementation of AMMs BIO-4, BIO-5, and BIO-7.

5.3 Sensitive Natural Communities and Critical Habitat

The proposed project would have a significant effect on biological resources if it would:

b) Have a substantial adverse impact 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.

Due to the high-level of disturbance present throughout the project area, salt grass flats was the singular sensitive community identified within the area. Salt grass flats are a vegetation community that is recognized in the Manual of California Vegetation Second Edition and was recently listed as a sensitive natural community by CDFW. This community is located outside of all temporary and permanent impact areas. Direct impacts to these communities are not anticipated as the project impacts will be limited to existing paved and dirt roadways and within the culver adjacent to the north portion of the project disturbance area along Rice Road. Indirect impacts could result during project construction through the introduction of invasive plant species or from inadvertent contact with heavy machinery. Potential indirect impacts would be avoided and/or reduced through the implementation of AMMs BIO-5 through BIO-8 as described in Section 5.8 Avoidance and Minimization Measures.

5.4 Jurisdictional Waters and Wetlands

The proposed project would have a significant effect on biological resources if it would:

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.

In total, less than one acre of impact to jurisdictional waters could result from project activities should traditional construction methods be used. However, the work plan states that crews will be using microtunneling methods for the potable water pipeline, which will not involve any open trenching or direct impacts to Salt Creek. Microtunneling will occur only along existing pipelines and will not include any ground disturbance within Salt Creek.

As started in the Project Description (see *Section 1.2.2 Trenchless Excavation*), construction staff would be using HDD or microtunneling methods to install the potable water pipeline, which will not involve any open trenching or direct impacts to Salt Creek. HDD or microtunneling would not include any ground disturbance within Salt Creek. If the HDD method is used, CDFW and RWQCB may require review and approval of a Frac-out Plan.

Where open trenching is proposed to occur within the limits of work along Rice Road north of Salt Creek, crews will be excavating for the potable water and recycled water pipeline connections in the vicinity of the potentially jurisdictional culvert. Because the culvert will only be temporarily impacted by the temporary staging of equipment and project materials, it is not anticipated that direct impact will occur to the potentially jurisdictional culvert adjacent to proposed excavation. Thus, direct impacts to both features will be avoided. Lastly, removal of riparian trees or vegetation by project activities would not occur. Indirect impacts to these features are not anticipated.

Potential indirect impacts would be avoided or minimized through the implementation of AMMs BIO-5 through BIO-7 as described in Section 5.8 Avoidance and Minimization Measures.

5.5 Wildlife Movement

The proposed project would have a significant effect on biological resources if it would:

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

The project activities would be limited to existing roads in the developed/disturbed portions of the project disturbance area, which offer little to no value to wildlife movement. The project disturbance area likely does not support substantial wildlife movement; therefore, impacts to wildlife movement would not result from project activities.

5.6 Resources Protected by Local Policies and Ordinances

The proposed project would have a significant effect on biological resources if it would:

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

5.6.1 Protected Trees

There are no protected trees within the project disturbance area; therefore, there are no anticipated impacts to protected trees. Tree removal is not proposed as part of this project.

5.7 Habitat Conservation Plans

The proposed project would have a significant effect on biological resources if it would:

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

The project disturbance area and broader BSA overlap with an MSHCP designated survey area for burrowing owl. Because EMWD is not an MSHCP Permittee, the focused surveys are not explicitly required. However, burrowing owl is a CESA Candidate species (to be listed as Endangered) and is required to be addressed the same as any other State listed species, and these requirements are typically more stringent than requirements under the MSHCP. Although unlikely to be directly present within the project disturbance area, burrowing owl could be present within adjacent disturbed habitat, disturbed grassland areas scrub, and within the disturbed/developed rip rap, particularly near the small mammal burrows, and potentially within the existing culvert (but not suitable for nesting) on the western edge of Rice Road, north of Salt Creek. Impacts would be fully avoided through implementation of AMM BIO-2, which requires full avoidance of direct and/or indirect impacts to burrowing owl by limiting construction to outside of nesting season, or if owls are determined present during the pre-construction survey, the establishment of exclusion buffers would be required. If burrowing owl are found during pre-construction survey efforts and cannot be fully (directly and indirectly) avoided, EMWD will obtain an Incidental Take Permit from CDFW prior to any vegetation removal or other ground disturbance. In addition, AMM BIO-7, requires implementation of general best management practices. No other impacts to listed species or species covered by the MSHCP are anticipated; however, if any other species found during pre-

construction survey and/or biological monitoring efforts (refer to AMM BIO-4), they would avoided accordingly.

Additionally, project construction may occur outside of the Rice Road right-of-way, and therefore may temporarily impact land owned by RCFC&WCD, including PQP land. If so, EMWD will need an encroachment permit from RCFC&WCD, and the RCFC&WCD will determine the requirements for EMWD to obtain an encroachment permit. At a minimum, all disturbed areas, including areas disturbed on PQP land shall be restored immediately following construction as described in AMM BIO-8.

Because EMWD is not a signatory to the Stephen's Kangaroo Rat HCP, the project is not subject to payment of the associated mitigation fee. Nevertheless, the project cannot conflict with the Stephen's Kangaroo Rat HCP. The Project site is too rocky and mountainous to support the Stephen's kangaroo rat and the project disturbance area would be confined to disturbed and developed lands; thus, no loss of Stephen's kangaroo rat habitat will occur. Additionally, impacts to Stephen's kangaroo rat would be avoided through the implementation of AMM BIO-4, which requires biological pre-construction survey and monitoring, AMM BIO-5, which requires worker environmental awareness training, and AMM BIO-7, which requires implementation of general best management practices. No conflicts with the Stephen's Kangaroo Rat HCP would occur.

5.8 Avoidance and Minimization Measures

The following AMMs shall be incorporated into the project design to the maximum extent feasible to avoid and minimize impacts to special status species and other sensitive biological resources.

BIO-1 Pre-Construction Nesting Bird Surveys

To avoid disturbance of nesting birds, including special status species and birds protected by the MBTA and CFGC Section 3503, project activities shall occur outside of the breeding season for nesting birds (generally February 1 through August 31), if feasible.

If construction occurs during the breeding season, then a pre-construction nesting bird survey shall be conducted by a qualified biologist/ornithologist (familiar with avian species known to inhabit southern California) no more than seven days prior to the initiation of project activities. Should construction activities not be initiated in any areas of the project, or be paused, for a period of seven days or longer, pre-construction surveys for nesting birds will be repeated. The nesting bird survey shall be conducted on foot within the project area and include a 500-foot buffer for raptors and special status species and a 100-foot buffer for all other species. Any area within the survey buffer that may be inaccessible will be carefully examined using binoculars. If nests are found, an exclusion (no disturbance) buffer of up to 500 feet for raptors and special status species and up to 100 feet for non-raptors shall be determined (based on the species, type of terrain/topography, the proposed work activity, noise levels, and existing disturbance associated with land use outside of the workspace) and clearly demarcated by the biologist with construction fencing, flagging, or other obvious methods to mark the exclusion buffer. The buffer shall be maintained and nest avoided until the young have fledged and/or the nest is no longer active.

BIO-2 Burrowing Owl Take Avoidance

Measures that shall be implemented during the project construction to avoid direct and indirect take of burrowing owl include:

- Burrowing owl pre-construction surveys shall be conducted by a qualified biologist/ornithologist within 14 days of the start of ground disturbing construction. The survey area shall include the project site and a 500-foot buffer around the project boundary. Any area within the survey buffer that may be inaccessible will be carefully examined using binoculars. Should construction activities not be initiated in any areas of the Project, or be paused, for a period of 14 days or longer, pre-construction surveys for burrowing owl will be repeated.
- If active burrowing owl burrows are detected in the project boundary or the 500-foot survey buffer, one of the following two options shall apply:
  - Construction shall not occur during the burrowing owl nesting season (typically February 1 to August 31), or
  - Burrowing owl shall be avoided through implementation of an exclusion (no disturbance) buffer demarcated by construction fencing, flagging, or other means to mark the exclusion buffer. Buffer distances are dependent on both the time of year and level of project disturbance, as outlined in the *Staff Report on Burrowing Owl Mitigation* by the California Department of Fish and Game (CDFG 2012). Depending on distance from project activities and level of disturbance from noise and human activity, use of haybale stacks or other visual screening may also be used in coordination with the qualified biologist/ornithologist to shelter the burrow from construction activities and allow for potentially reduced exclusion buffer zones. Any buffer reduction shall be addressed in coordination with CDFW.
- Construction materials shall be made unsuitable for burrowing owl occupation by various methods, including capping open pipes or other materials that could preclude burrowing owls from being attracted to these materials.
- In the unlikely event that burrowing owl cannot be directly and indirectly avoided, EMWD would be required to obtain an Incidental Take Permit from CDFW, along with implementing compensatory mitigation

BIO-3 Crotch's Bumble Bee Take Avoidance and Minimization

Measures that shall be implemented during the project construction to avoid and/or minimize direct take of Crotch's bumble bee (CBB) include:

- Pre-construction surveys for CBB and nests shall be conducted within any potentially suitable habitats within and around the project disturbance area prior to initial ground-disturbing activities (e.g., grubbing/removing vegetation, excavation, grading, construction). The purpose of these surveys is to identify active nest colonies inside of permanent and temporary impact areas.
- Pre-construction surveys shall follow the survey methodologies set out in the CDFW Survey Considerations for CESA Candidate Bumble Bee (CDFW 2025g) or other survey methodology approved by CDFW.
- Pre-construction surveys shall be conducted during appropriate survey period, specifically within the colony's active period from April through August, as outlined in the CDFW Survey Considerations or as otherwise approved by CDFW.
- Pre-construction surveys identifying active nest colonies inside of permanent and temporary impact areas within the project footprint:

  - An appropriate no disturbance buffer zone shall be established around the active nest colony to reduce the risk of disturbance or accidental take. The buffer distance shall be established by a qualified biologist and will provide no less than 50 feet of clearance around active nest entrances.
  - Project proponent/operator shall consult with a qualified biologist to discuss considerations and recommendations on the implementation of project activities to avoid take of the CBB.

- If a no disturbance buffer zone is both appropriate and feasible, construction activities will not occur within that buffer zone until a qualified biologist determines the previously active nest to no longer be active (i.e., no CBB are seen flying in or out of the nest for three consecutive days [during suitable weather conditions when CBB are typically active] indicating the colony has completed its nesting season and the next season's queens have dispersed from the colony), after which construction activities may resume within that buffer zone.
- If avoidance of the active nest is not feasible, the project proponent/operator shall consult with CDFW regarding the potential for project activities to result in take of the CBB and shall comply with the avoidance, minimization, and compensatory mitigation requirements set forth in any Incidental Take Permit issued for the project by CDFW.

BIO-4 Biological Pre-Construction Survey and Monitoring

A qualified biologist shall conduct a pre-construction survey of the project disturbance area and a 50-foot buffer zone for special-status plant species (focusing on smooth tarplant, and assuming project disturbance area has not been actively mowed) and potential burrows that could support special-status wildlife species within 14 days prior to the start of ground disturbance. Any area within the survey buffer that may be inaccessible will be carefully examined using binoculars. Should construction activities not be initiated in any areas of the project, or be paused, for a period of 14 days or longer, pre-construction surveys for special-status species will be repeated.

If special-status species are found, a biological monitor will clearly demarcate (e.g., flagging, fencing, or other methods obvious to construction crews) these areas as no-disturbance exclusion zones. The biological monitor will remain on site during all vegetation removal and ground disturbance or other activities that have a potential to directly or indirectly impact special-status species determined present within the project disturbance area or within 50 feet of the work areas. If needed, the biologist will oversee and provide recommendations to ensure avoidance of these regulated biological resources and will have the authority to temporarily halt work to protect them. After initial vegetation removal and disturbance is complete, and if no sensitive resources or special-status species are found, the biological monitor will no longer need to be present, but should return during demobilization activities.

BIO-5 Worker Environmental Awareness Training

Prior to the initiation of the project, an approved biologist shall present a Worker Environmental Awareness Training (WEAT) to all on-site personnel. The WEAT will educate the personnel on the identification of special status species and regulated biological resources that are present or have the potential to occur within the BSA and project disturbance area, will cover the applicable regulatory policies and provisions regarding their protection, and will provide an overview of the mitigation measures. Furthermore, on-site personnel will be briefed on the communication protocol and reporting process if an inadvertent injury or mortality should occur to a special status species during construction.

BIO-6 Invasive Plant Species Control

Invasive plant species, for the purpose of this document, shall include all species with a California Invasive Plant Council (Cal-IPC) rating of limited, moderate, or high. Construction personnel and equipment shall be free of invasive plant seeds, propagules, and any material which may contain them (e.g., soil) prior to entering the BSA. All potentially contaminated equipment will be carefully cleaned prior to the initiation of project activities, and will be checked by the biological monitor. Staging and temporary work areas shall avoid causing or exacerbating weed and non-native infestations by remaining within the approved limits of disturbance. Only certified weed-free materials (e.g., gravel, straw, and fill) will be used for the project.

BIO-7 General Best Management Practices

General requirements that shall be followed by construction personnel are listed below.

- Contractor shall clearly demarcate the project limits, staging areas, and access points using the appropriate fencing, flagging, or method that results in boundaries that are most obvious to construction crews, and prohibit any construction-related activities from extending outside of these boundaries.
- All food-related trash items, such as wrappers, cans, bottles, and food scraps generated during project construction, shall be disposed of in closed containers only and removed from the workspace.
- Best management practices (BMPs) shall be implemented throughout the project and shall include, but not be limited to, erosion and sediment controls to minimize erosion during construction. BMPs shall be implemented for the duration of the project until disturbed areas have been stabilized by long-term erosion control measures.
- Materials, such as construction equipment, re-bar, pipes, oil, gasoline, tarps, drip pans, and any other construction materials, shall be stored at least 50 feet from Salt Creek, or equipment will utilize secondary containment.
- Construction materials and spoils shall be protected from stormwater runoff using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw wattle barriers, as appropriate.
- Vegetation trimming shall be limited to the maximum extent feasible.
- Any substances that could be hazardous to wildlife resulting from project-related activities shall be prevented from contaminating the soil and/or entering waterways.
- Construction shall only occur during daylight hours.

BIO-8 Post-Construction Restoration

After construction is complete, EMWD shall immediately restore all areas of disturbance, including within and around Public/Quasi-Public lands (PQP), back to pre-construction conditions or better. Requirements include, but shall not be limited to, the following:

- To establish a restoration baseline, pre-construction site conditions shall be documented and photographed.
- Restoration shall include broadcast of a native seed mix with the following applicable considerations:
  - Native seed mix shall include native plant species occurring in the BSA, including but not limited to smooth tarplant.

  - Native seed broadcast shall occur in all areas of disturbance to cover the interface between the non-PQP and PQP land, ensuring that native seed mix on PQP land has a better chance of success.
  - Native seed mix shall not include any of the prohibited species listed on MSHCP Table 6-2 *Plants that Should be Avoided Adjacent to the MSHCP Conservation Area* (i.e. use is prohibited).
  - Native seed mix broadcast is not required within existing paved or compacted dirt road footprints.

- A native plant specialist or botanist shall assess restored areas for native seed establishment every four months for a one-year duration. If it is observed that growth and establishment of the native seed is not successful, additional native seed broadcasting shall be required, also subject to monitoring until successful establishment has been achieved.

6 Limitations, Assumptions, and Use Reliance

This Biological Resources Assessment has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed. Reconnaissance biological surveys for certain taxa may have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis, or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, review of CNDDB RareFind5, and specified historical and literature sources. Standard data sources relied upon during the completion of this report, such as the CNDDB, may vary with regard to accuracy and completeness. In particular, the CNDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary research and analysis.

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Appendix A

Regulatory Setting

Regulatory Setting

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. A number of federal and state statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the project site include the following:

- U.S. Army Corps of Engineers (wetlands and other waters of the United States)
- U.S. Fish and Wildlife Service (federally listed species and migratory birds)
- National Marine Fisheries Service (marine wildlife and anadromous fishes)
- Santa Ana Regional Water Quality Control Board (waters of the State)
- California Department Fish and Wildlife (riparian areas, streambeds, and lakes; state-listed species; nesting birds, marine resources)
- Western Riverside Multiple Species Habitat Conservation Plan (MSHCP)

United States Army Corps of Engineers

The United States Army Corps of Engineers (USACE) is responsible for administering several federal programs related to ensuring the quality and navigability of the nation's waters.

Clean Water Act Section 404

Congress enacted the Clean Water Act (CWA) "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 404 of the CWA authorizes the Secretary of the Army, acting through the USACE, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites."

Section 502 of the CWA further defines "navigable waters" as "waters of the United States, including the territorial seas." "Waters of the United States" are broadly defined at 33 CFR Part 328.3 to include navigable, tidal, and interstate waters and certain impoundments, tributaries, and wetlands. The agencies' most recent regulatory definition of the term was promulgated in January 2025, following failed attempts in prior years that had been frustrated by legal challenges. However, in May 2025 the U.S. Supreme Court issued its ruling in *Sackett v. Environmental Protection Agency,* which invalidated portions of the updated regulations. To address this ruling, in September 2025 the agencies issued a "conforming rule" (88 FR 61964-61969) modifying their definition of "waters of the United States" to comport with the Court's ruling. This definition is described in detail below.

Waters of the U.S.

Current USACE and USEPA regulations, reflecting of the January 2025 definition as modified by the September 2025 Conforming Rule, define "waters of the United States" as follows (33 CFR 328.3; see also 88 FR 61964-61969):

(1) Waters which are:

(i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(ii) The territorial seas; or

(iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;

(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent to the following waters:

(i) Waters identified in paragraph (a)(1) of this section; or

(ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds, not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

The definition specifies that the following features are not "waters of the United States" even where they otherwise meet the terms of provisions (2) through (5) above:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and

(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

The lateral limits of USACE jurisdiction in non-tidal waters is defined by the "ordinary high-water mark" (OHWM) unless adjacent wetlands are present. The OHWM is a line on the shore or edge of a channel established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed upon the bank, shelving, changes in the character of soil, destruction of vegetation, or the presence of debris (33 CFR 328.3(c)(1)). As such, waters are recognized in the

field by the presence of a defined watercourse with appropriate physical and topographic features. If wetlands occur within, or adjacent to, waters of the United States, the lateral limits of USACE jurisdiction extend beyond the OHWM to the outer edge of the wetlands (33 CFR 328.4 (c)). The upstream limit of jurisdiction in the absence of adjacent wetlands is the point beyond which the OHWM is no longer perceptible (33 CFR 328.4; see also 51 FR 41217).

Wetlands

The USACE defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3(c)(1)). The USACE's delineation procedures identify wetlands in the field based on indicators of three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. The following is a discussion of each of these parameters.

Hydrophytic Vegetation

Hydrophytic vegetation dominates areas where frequency and duration of inundation or soil saturation exerts a controlling influence on the plant species present. Plant species are assigned wetland indicator status according to the probability of their occurring in wetlands. More than fifty percent of the dominant plant species must have a wetland indicator status to meet the hydrophytic vegetation criterion. The USACE published the National Wetland Plant List (USACE 2018), which separates vascular plants into the following four basic categories based on plant species frequency of occurrence in wetlands:

- **Obligate Wetland (OBL).** Almost always occur in wetlands
- **Facultative Wetland (FACW).** Usually occur in wetlands, but occasionally found in non-wetlands
- **Facultative (FAC).** Occur in wetlands or non-wetlands
- **Facultative Upland (FACU).** Usually occur in non-wetlands, but may occur in wetlands
- **Obligate Upland (UPL).** Almost never occur in wetlands

The USACE considers OBL, FACW and FAC species to be indicators of wetlands. An area is considered to have hydrophytic vegetation when greater than 50 percent of the dominant species in each vegetative stratum (tree, shrub, and herb) fall within these categories. Any species not appearing on the United States Fish and Wildlife Service's list is assumed to be an upland species, almost never occurring in wetlands. In addition, an area needs to contain at least 5% vegetative cover to be considered as a vegetated wetland.

Hydric Soils

Hydric soils are saturated or inundated for a sufficient duration during the growing season to develop anaerobic or reducing conditions that favor the growth and regeneration of hydrophytic vegetation. Field indicators of wetland soils include observations of ponding, inundation, saturation, dark (low chroma) soil colors, bright mottles (concentrations of oxidized minerals such as iron), gleying (indicates reducing conditions by a blue-grey color), or accumulation of organic material. Additional supporting information includes documentation of soil as hydric or reference to wet conditions in the local soils survey, both of which must be verified in the field.

Wetland Hydrology

Wetland hydrology is inundation or soil saturation with a frequency and duration long enough to cause the development of hydric soils and plant communities dominated by hydrophytic vegetation. If direct observation of wetland hydrology is not possible (as in seasonal wetlands), or records of wetland hydrology are not available (such as stream gauges), assessment of wetland hydrology is frequently supported by field indicators, such as water marks, drift lines, sediment deposits, or drainage patterns in wetlands.

Limitations on Jurisdiction based on Sackett v. USEPA Supreme Court Decision

On May 25, 2025, the Supreme Court issued its decision on the petition from the Sacketts, a family in Idaho that was subject to a compliance order from the USEPA for backfilling their lot near Priest Lake, which the USEPA claimed contained federally regulated wetlands. The wetlands in question were adjacent to a ditch that fed a creek that ultimately drained into Priest Lake, a navigable water body. The USEPA asserted that the Sacketts had violated the law by filling the wetlands on their property without a permit. The Court's decision addressed controversy over whether, and under what conditions, the CWA reaches navigable waters' tributaries or adjacent wetlands. The Supreme Court's decision in *Sackett* provides definitive guidance to the agencies in determining the limits of their Clean Water Act authority. Major tenets of the decision have been incorporated into the agencies' current regulations through the September 2025 Conforming Rule.

The Court decided:

- "Adjacent wetlands" are WOTUS only if there is a continuous surface connection between the wetland and a navigable or relatively permanent water body, such that it is difficult to determine the boundary between the wetland and the water body. The opinion notes that "temporary interruptions to surface connection may sometimes occur because of phenomena like low tides or dry spells." The agencies addressed this element by defining the term "adjacent" to mean "having a continuous surface connection" in the Conforming Rule.
- The Significant Nexus Standard, introduced by the Court in prior decisions, is not mentioned in the Clean Water Act and should not be used. The Court determined that the standard applies ecological factors whose use in determining jurisdiction is not supported by the statute. The Conforming Rule removed significant nexus considerations from the definition.
- Although jurisdiction over tributaries was not addressed by the Court, the decision stated that "…the [Clean Water Act's] use of "waters" encompasses only those relatively permanent, standing or continuously flowing bodies of water forming geographical features that are described in ordinary parlance as streams, oceans, rivers, and lakes." The Conforming Rule makes clear that only relatively permanent tributaries qualify as "waters of the United States."

Rivers and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the USACE for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, re-channelization, or any other modification of a navigable water of the United States and applies to all structures and work. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (e.g., riprap, revetment, bulkhead), mooring structures such as pilings, aerial or

subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction. It is important to note that Section 10 applies only to navigable waters and thus does not apply to work in non-navigable wetlands or tributaries. In some cases, Section 10 authorization is issued by the USACE concurrently with CWA Section 404 authorization, such as when certain Nationwide Permits are used.

Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) have jurisdiction over "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the boundaries of the state (California Water Code sec. 13050(e)). These agencies also have responsibilities for administering portions of the CWA.

Clean Water Act Section 401

Section 401 of the CWA requires an applicant requesting a federal license or permit for an activity that may result in any discharge into navigable waters (such as a Section 404 Permit) to provide state certification that the proposed activity will not violate state and federal water quality standards. In California, CWA Section 401 Water Quality Certification (Section 401 Certification) is issued by the RWQCBs and by the SWRCB for multi-region projects. The process begins when an applicant submits an application to the RWQCB and informs the USACE (or the applicable agency from which a license or permit was requested) that an application has been submitted. The USACE will then determine a "reasonable period of time" for the RWQCB to act on the application; this is typically 60 days for routine projects and longer for complex projects but may not exceed one year. When the period has elapsed, if the RWQCB has not either issued or denied the application for Section 401 Certification, the USACE may determine that Certification has been waived and issue the requested permit. If a Section 401 Certification is issued it may include binding conditions, imposed either through the Certification itself or through the requested federal license or permit.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 et seq.), the policy of the State is as follows:

- The quality of all the waters of the State shall be protected
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason
- The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation

The Porter-Cologne Act established nine RWQCBs (based on watershed boundaries) and the SWRCB, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. In addition, the SWRCB allocates rights to the use of

surface water. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The SWRCB and RWQCBs have numerous nonpoint source related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

Section 13260 of the Porter-Cologne Act requires any person discharging or proposing to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB. The RWQCB may then authorize the discharge, subject to conditions, by issuing Waste Discharge Requirements (WDRs). While this requirement was historically applied primarily to outfalls and similar point source discharges, the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, effective May 2020, make it clear that the agency will apply the Porter-Cologne Act's requirements to discharges of dredge and fill material as well. The *Procedures* state that they are to be used in issuing CWA Section 401 Certifications and WDRs and largely mirror the existing review requirements for CWA Section 404 Permits and Section 401 Certifications, incorporating most elements of the USEPA's *Section 404(b)(1) Guidelines*. Following issuance of the *Procedures*, the SWRCB produced a consolidated application form for dredge/fill discharges that would be used to obtain a CWA Section 401 Water Quality Certification, WDRs, or both.

Non-Wetland Waters of the State

The SWRCB and RWQCBs have not established regulations for field determinations of waters of the state except for wetlands currently. In many cases the RWQCBs interpret the limits of waters of the State to be bounded by the OHWM unless isolated conditions or ephemeral waters are present. However, in the absence of statewide guidance each RWQCB may interpret jurisdictional boundaries within their region and the SWRCB has encouraged applicants to confirm jurisdictional limits with their RWQCB before submitting applications. As determined by the RWQCB, waters of the State may include riparian areas or other locations outside the OHWM, leading to a larger jurisdictional area over a given water body compared to the USACE.

Wetland Waters of the State

Procedures for defining wetland waters of the State pursuant to the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* went into effect May 28, 2020. The SWRCB defines an area as wetland if, under normal circumstances:

(i) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;

(ii) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and

(iii) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The SWRCB's Implementation Guidance for the Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State (2020), states that waters of the U.S. and waters of the State should be delineated using the standard USACE delineation procedures, taking into consideration that the methods shall be modified only to allow for the fact that a lack of vegetation does not preclude an area from meeting the definition of a wetland.

United States Fish and Wildlife Service

The United States Fish and Wildlife Service (USFWS) implements several laws protecting the Nation's fish and wildlife resources, including the Endangered Species Act (ESA; 16 United States Code [USC] Sections 153 et seq.), the Migratory Bird Treaty Act (MBTA; 16 USC Sections 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668).

Endangered Species Act

The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. Generally, the USFWS implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in "take" of any threatened or endangered wildlife species, or a threatened or endangered plant species if occurring on federal land, are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of the ESA, depending on the involvement by the federal government in funding, authorizing, or carrying out the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. "Take" under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of the ESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

Migratory Bird Treaty Act

The MBTA of 1918 implements four international conservation treaties that the U.S. entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. It is intended to ensure the sustainability of populations of all protected migratory bird species. The law has been amended with the signing of each treaty, as well as when any of the treaties were amended, such as with Mexico in 1976 and Canada in 1995. The MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS.

The list of migratory bird species protected by the law, in regulations at 50 CFR Part 10.13, is primarily based on bird families and species included in the four international treaties. A migratory bird species is included on the list if it meets one or more of the following criteria:

1. It occurs in the United States or U.S. territories as the result of natural biological or ecological processes and is currently, or was previously listed as, a species or part of a family protected by one of the four international treaties or their amendments.
2. Revised taxonomy results in it being newly split from a species that was previously on the list, and the new species occurs in the United States or U.S. territories as the result of natural biological or ecological processes.
3. New evidence exists for its natural occurrence in the United States or U.S. territories resulting from natural distributional changes and the species occurs in a protected family.

In 2004, the Migratory Bird Treaty Reform Act limited the scope of the MBTA by stating the MBTA applies only to migratory bird species that are native to the United States or U.S. territories, and that a native migratory bird species is one that is present as a result of natural biological or

ecological processes. The MBTRA requires the USFWS to publish a list of all nonnative, human-introduced bird species to which the MBTA does not apply, and an updated list was published in 2020. The 2020 update identifies species belonging to biological families referred to in treaties the MBTA implements but are not protected because their presence in the United States or U.S. territories is solely the result of intentional or unintentional human-assisted introductions.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits anyone, without a permit issued by the USFWS, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

"Disturb" means "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) derives its authority from the Fish and Game Code of California and administers several State laws protecting fish and wildlife resources and the habitats upon which they depend.

California Endangered Species Act

The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et. seq.) prohibits take of state listed threatened or endangered. Take under CESA is defined as "Hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (Fish and Game Code sec. 86). This definition does not prohibit indirect harm by way of habitat modification, except where such harm is the proximate cause of death of a listed species. Where incidental take would occur during construction or other lawful activities, CESA allows the CDFW to issue an Incidental Take Permit upon finding, among other requirements, that impacts to the species have been minimized and fully mitigated. Unlike the federal ESA, CESA's protections extend to candidate species during the period (typically one year) while the California Fish and Game Commission decides whether the species warrants CESA listing.

Native Plant Protection Act

The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare, and prohibits the take of listed plant species. Effective in 2015, CDFW promulgated regulations (14 CCR 786.9) under the authority of the NPPA, establishing that the CESA's permitting procedures would be applied to plants listed under the NPPA as "Rare." With this change, there is little practical difference for the regulated public between plants listed under CESA and those listed under the NPPA.

Fully Protected Species Laws

The CDFW enforces Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code, which prohibit take of species designated as Fully Protected. The CDFW is not allowed to issue an Incidental Take Permit for Fully Protected species; therefore, impacts to these species must be avoided. The exception is situations where a Natural Community Conservation Plan (NCCP) is in place that authorizes take of the fully protected species.

Avian Protection Laws

California Fish and Game Code sections 3503, 3503.5, and 3513 describe unlawful take, possession, or destruction of native birds, nests, and eggs. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Section 3513 makes it a state-level offense to take any bird in violation of the federal Migratory Bird Treaty Act.

Protection of Lakes and Streambeds

California Fish and Game Code section 1602 states that it is unlawful for any person to "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake" without first notifying the California Department of Fish and Wildlife (CDFW) of that activity. Thereafter, if CDFW determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. If, however, CDFG determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity may be required to obtain from CDFW a Streambed Alteration Agreement (SAA), which will include reasonable measures necessary to protect the affected resource(s), before the entity may conduct the activity described in the notification. Upon receiving a complete Notification of Lake/Streambed Alteration, CDFW has 60 days to present the entity with a Draft SAA. Upon review of the Draft SAA by the applicant, any problematic terms are negotiated with CDFW and a final SAA is executed.

The CDFW has not defined the term "stream" for the purposes of implementing its regulatory program under Section 1602, and the agency has not promulgated regulations directing how jurisdictional streambeds may be identified, or how their limits should be delineated. However, four relevant sources of information offer insight as to the appropriate limits of CDFW jurisdiction as discussed below.

- **The plain language of Section 1602 of CFGC** establishes the following general concepts:
  - References "river," "stream," and "lake"
  - References "natural flow"
  - References "bed," "bank," and "channel"

- **Applicable court decisions**, in particular *Rutherford v. State of California* (188 Cal App. 3d 1276 (1987), which interpreted Section 1602's use of "stream" to be as defined in common law. The Court indicated that a "stream" is commonly understood to:
  - Have a source and a terminus
  - Have banks and a channel
  - Convey flow at least periodically, but need not flow continuously and may at times appear outwardly dry
  - Represent the depression between the banks worn by the regular and usual flow of the water
  - Include the area between the opposing banks measured from the foot of the banks from the top of the water at its ordinary stage, including intervening sand bars
  - Include the land that is covered by the water in its ordinary low stage
  - Include lands below the OHWM
- **CDFW regulations** defining "stream" for other purposes, including sport fishing (14 CCR 1.72) and streambed alterations associated with cannabis production (14 CCR 722(c)(21)), which indicate that a stream:
  - Flows at least periodically or intermittently
  - Flows through a bed or channel having banks
  - Supports fish or aquatic life
  - Can be dry for a period of time
  - Includes watercourses where surface or subsurface flow supports or has supported riparian vegetation
- **Guidance documents**, *including A Field Guide to Lake and Streambed Alteration Agreements* (CDFG 1994) and *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (Brady and Vyverberg 2013), which suggest the following:
  - A stream may flow perennially or episodically
  - A stream is defined by the course in which water currently flows, or has flowed during the historic hydrologic course regime (approximately the last 200 years)
  - Width of a stream course can reasonably be identified by physical or biological indicators
  - A stream may have one or more channels (single thread vs. compound form)
  - Features such as braided channels, low-flow channels, active channels, banks associated with secondary channels, floodplains, islands, and stream-associated vegetation, are interconnected parts of the watercourse
  - Canals, aqueducts, irrigation ditches, and other means of water conveyance may be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife
  - Biologic components of a stream may include aquatic and riparian vegetation, all aquatic wildlife including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system
  - The lateral extent of a stream may be measured in different ways depending on the particular situation and the type of fish or wildlife resource at risk

The tenets listed above, among others, are applied to establish the boundaries of streambeds in various environments. Importance of each factor may be weighted based on site-specific considerations and the applicability of the indicators to the streambed at hand.

Local Jurisdiction

Western Riverside County Multiple Species Habitat Conservation Plan

The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) is a comprehensive, multi-jurisdictional habitat conservation plan (HCP) focusing on conservation of species and their associated habitats in western Riverside County. The overall goal of this plan is to maintain biological and ecological diversity within a rapidly urbanizing region. The MSHCP encompasses approximately 1.26 million acres (1,966 square miles); it includes all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the Cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto. This regional HCP is one of the largest plans ever attempted. It covers multiple species and multiple habitats within a diverse landscape, from urban centers to undeveloped foothills and montane forests, all under multiple jurisdictions. It extends across many bioregions as well, including the Santa Ana Mountains, Riverside Lowlands, San Jacinto Foothills, San Jacinto Mountains, Agua Tibia Mountains, Desert Transition, and San Bernardino Mountains. It provides a coordinated MSHCP Conservation Area and implementation program to preserve biological diversity and maintain the region's quality of life (Riverside County Planning Department 2025).

The MSHCP allows Riverside County and its Cities, as well as other Permittees in the Plan, to better control local land-use decisions and maintain a strong economic climate in the region while addressing the requirements of the state and federal Endangered Species Acts. Permittee projects or projects subject to a Permittee discretionary permit approval area able to use the MSHCP for state and federal ESA take coverage for those species covered by the MSHCP. Projects inside the MSHCP area that are proposed by a non-Permittee or are not subject to a discretionary permit from a Permittee, may choose to the use the MSHCP Participating Special Entity (PSE) process to obtain state and federal ESA coverage for species covered by the MSHCP.

Riverside County Municipal Code Chapter 12.24

Riverside County Code Chapter 12.24 states: “No person shall remove any living native tree on any parcel or property greater than one-half acre in size, located in an area above five thousand (5,000) feet in elevation and within the unincorporated area of the county, without first obtaining a permit to do so” (County of Riverside 2025).

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Appendix B

Special Status Species Evaluation Tables

Special Status Plant Species in the Regional Vicinity of the Project Site

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Plants and Lichens				
Abronia villosa var. *aurita* chaparral sand-verbena	None/None G5T2?/S2 1B.1	Annual herb. Chaparral, coastal scrub, desert dunes. Sandy. Elevations: 245-5250ft. (75-1600m.) Blooms (Jan) Mar-Sep.	Low potential	Chaparral and desert dunes not present within study area to support species.
Allium munzii Munz's onion	FE/ST G1/S1 1B.1	Perennial bulbiferous herb. Chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland. Clay, mesic. Elevations: 975-3510ft. (297-1070m.) Blooms Mar-May.	Low potential	Marginally suitable habitat for species present in heavily disturbed areas of the site containing mowed grassland habitat.
Arctostaphylos rainbowensis Rainbow manzanita	None/None G2/S2 1B.1	Perennial evergreen shrub. Chaparral. Usually found in gabbro chaparral. Elevations: 675-2200ft. (205-670m.) Blooms Dec-Mar.	No potential	Suitable habitat does not exist in the heavily disturbed non-native grassland and mediterranean grassland habitat that falls within the study area.
Atriplex parishii Parish's brittlescale	None/None G1G2/S1 1B.1	Annual herb. Chenopod scrub, playas, vernal pools. Alkaline. Elevations: 80-6235ft. (25-1900m.) Blooms Jun-Oct.	Low potential	Suitable chenopod scrub, playas, nor vernal pools exist within the study area; however, alkali soil exist intermittently throughout the study area.
Calochortus plummerae Plummer's mariposa-lily	None/None G4/S4 4.2	Perennial bulbiferous herb. Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Granitic, rocky. Elevations: 330-5580ft. (100-1700m.) Blooms May-Jul.	No potential	Suitable soil type is not present within the site/study area to support this species.
Calochortus weedii var. *intermedius* intermediate mariposa-lily	None/None G3G4T3/S3 1B.2	Perennial bulbiferous herb. Chaparral, coastal scrub, valley and foothill grassland. Rocky. Elevations: 345-2805ft. (105-855m.) Blooms May-Jul.	Low potential	Marginally suitable habitat for species present in heavily disturbed areas of the site containing rocky substrate.
Caulanthus simulans Payson's jewelflower	None/None G4/S4 4.2	Annual herb. Chaparral, coastal scrub. Granitic, sandy. Elevations: 295-7220ft. (90-2200m.) Blooms (Feb) Mar-May (Jun).	Low potential	Sandy soil types are located intermittently throughout the study area that may provide limited substrate for the species; however, the heavily disturbed and actively maintained vegetation, does not support the species.
Centromadia pungens ssp. *laevis* smooth tarplant	None/None G3G4T2/S2 1B.1	Annual herb. Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland. Alkaline. Elevations: 0-2100ft. (0-640m.) Blooms Apr-Sep.	Moderate potential	Suitable soil type is present within the site/study area to support this species; species known to occur in heavily disturbed areas.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Chorizanthe parryi var. *parryi* Parry's spineflower	None/None G3T2/S2 1B.1	Annual herb. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Openings, Rocky (sometimes), sandy (sometimes). Elevations: 900-4005ft. (275-1220m.) Blooms Apr-Jun.	Low potential	Marginally suitable habitat for species present in heavily disturbed areas of the site containing rocky substrate.
Chorizanthe polygonoides var. *longispina* long-spined spineflower	None/None G5T3/S3 1B.2	Annual herb. Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools. Clay (often). Elevations: 100-5020ft. (30-1530m.) Blooms Apr-Jul.	No potential	Suitable soil type and vegetation cover is not present within the site/study area to support this species.
Clinopodium chandleri San Miguel savory	None/None G2G3/S2 1B.2	Perennial shrub. Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Gabbroic (sometimes), rocky (sometimes). Elevations: 395-3525ft. (120-1075m.) Blooms Mar-Jul.	No potential	Suitable soil type and vegetation cover is not present within the site/study area to support this species.
Deinandra mohavensis Mojave tarplant	None/SE G3/S3 1B.3	Annual herb. Chaparral, coastal scrub, riparian scrub. Low sand bars in riverbed; mostly in riparian areas or in ephemeral grassy areas. Elevations: 2100-5250ft. (640-1600m.) Blooms (Jan-May) Jun-Oct.	Low potential	Marginally suitable habitat present adjacent to Salt Creek to support species; however, heavily disturbed and actively maintained vegetation within the study area precludes this species from occurring.
Dodecahema leptoceras slender-horned spineflower	FE/SE G1/S1 1B.1	Annual herb. Chaparral, cismontane woodland, coastal scrub. Flood deposited terraces and washes; associates include *Encelia, Dalea, Lepidospartum*, etc. Sandy soils. Elevations: 655-2495ft. (200-760m.) Blooms Apr-Jun.	Low potential	Marginally suitable soil type is present within the site/study area to support this species; however, heavily disturbed and actively maintained vegetation preclude this species from occurring.
Dudleya multicaulis many-stemmed dudleya	None/None G2/S2 1B.2	Perennial herb. Chaparral, coastal scrub, valley and foothill grassland. In heavy, often clayey soils or grassy slopes. Elevations: 50-2590ft. (15-790m.) Blooms Apr-Jul.	Low potential	Limited suitable soil type and vegetation cover is falls within the site/study area to potentially support this species.
Eryngium aristulatum var. *parishii* San Diego button-celery	FE/SE G5T1/S1 1B.1	Annual/perennial herb. Coastal scrub, valley and foothill grassland, vernal pools. San Diego mesa hardpan and claypan vernal pools and southern interior basalt flow vernal pools; usually surrounded by scrub. Elevations: 65-2035ft. (20-620m.) Blooms Apr-Jun.	No potential	Suitable soil type and vegetation cover is not present within the site/study area to support this species.
Githopsis diffusa ssp. *filicaulis* Mission Canyon bluecup	None/None G5T1Q/S1 3.1	Annual herb. Chaparral. Probably in open, grassy places and mesic, disturbed areas; much overlooked. Elevations: 1475-2295ft. (450-700m.) Blooms Apr-Jun.	Low potential	Marginally suitable habitat present within disturbed grassland habitats throughout the study area.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Harpagonella palmeri Palmer's grapplinghook	None/None G4/S3 4.2	Annual herb. Chaparral, coastal scrub, valley and foothill grassland. Clay soils; open grassy areas within shrubland. Elevations: 65-3135ft. (20-955m.) Blooms Mar-May.	No potential	Suitable soil type and vegetation cover is not present within the site/study area to support this species.
Imperata brevifolia California satintail	None/None G3/S3 2B.1	Perennial rhizomatous herb. Chaparral, coastal scrub, meadows and seeps, Mojavean desert scrub, riparian scrub. Mesic sites, alkali seeps, riparian areas. 3-. Elevations: 0-3985ft. (0-1215m.) Blooms Sep-May.	Low potential	Marginally suitable habitat along Salt Creek; however, heavy disturbance and maintained vegetation precludes this species from occurring within the disturbed habitat within the study area.
Juncus luciensis Santa Lucia dwarf rush	None/None G3/S3 1B.2	Annual herb. Chaparral, great basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools. Vernal pools, ephemeral drainages, wet meadow habitats and streamsides. Elevations: 985-6695ft. (300-2040m.) Blooms Apr-Jul.	No potential	Suitable habitat not present within the study area to support this species.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	None/None G4T2/S2 1B.1	Annual herb. Marshes and swamps, playas, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. 1-. Elevations: 5-4005ft. (1-1220m.) Blooms Feb-Jun.	Low potential	Marginal suitable soils present throughout study area; however, suitable vegetation habitat not present within the study area to support this species.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	None/None G5T3/S3 4.3	Annual herb. Chaparral, coastal scrub. Dry soils, shrubland. 4-. Elevations: 5-2905ft. (1-885m.) Blooms Jan-Jul.	Low potential	Marginal suitable soils present throughout study area; however, suitable vegetation habitat not present within the study area to support this species.
Myosurus minimus ssp. *apus* little mousetail	None/None G5T2Q/S2 3.1	Annual herb. Valley and foothill grassland, vernal pools. Alkaline soils. Elevations: 65-2100ft. (20-640m.) Blooms Mar-Jun.	Low potential	Marginal suitable soils present throughout study area; however, suitable vegetation habitat not present within the study area to support this species.
Nama stenocarpa mud nama	None/None G4G5/S1S2 2B.2	Annual/perennial herb. Marshes and swamps. Lake shores, riverbanks, intermittently wet areas. Elevations: 15-1640ft. (5-500m.) Blooms Jan-Jul.	No potential	Marsh and swamp habitat not present within the study area to support this species.
Navarretia fossalis spreading navarretia	FT/None G2/S2 1B.1	Annual herb. Chenopod scrub, marshes and swamps, playas, vernal pools. San Diego hardpan and San Diego claypan vernal pools; in swales and vernal pools, often surrounded by other habitat types. Elevations: 100-2150ft. (30-655m.) Blooms Apr-Jun.	Low potential	Chenopod scrub, marshland, swamp, and vernal pools not present within the study area to support the species. Soil type within the study area provides limited habitat suitability to support the species' occurrence within study area.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Navarretia prostrata prostrate vernal pool navarretia	None/None G2/S2 1B.2	Annual herb. Coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools. Alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites. Elevations: 10-3970ft. (3-1210m.) Blooms Apr-Jul.	Low potential	Marginal suitable soils present throughout study area; however, suitable vegetation habitat not present within the study area to support this species.
Orcuttia californica California Orcutt grass	FE/SE G1/S1 1B.1	lower elevation grasslands and coastal sage communities in and around the Los Angeles Basin. Open ground with fine, sandy soils. May not dig extensive burrows, hiding under weeds and dead leaves instead.	Low potential	Vernal pools not present within study area to support species; however, marginal suitable alkaline soils are present within the study area.
Pseudognaphalium leucocephalum white rabbit-tobacco	None/None G4/S2 2B.2	Perennial herb. Chaparral, cismontane woodland, coastal scrub, riparian woodland. Sandy, gravelly sites. Elevations: 0-6890ft. (0-2100m.) Blooms (Jul)Aug-Nov (Dec).	Low potential	Though sandy/saline soils exist on site, no suitable herbaceous/scrub habitat exists to support presence of species.
Scutellaria bolanderi ssp. *austromontana* southern mountains skullcap	None/None G4T3/S3 1B.2	Perennial rhizomatous herb. Chaparral, cismontane woodland, lower montane coniferous forest. In gravelly soils on streambanks or in mesic sites in oak or pine woodland. Elevations: 1395-6560ft. (425-2000m.) Blooms Jun-Aug.	No potential	Suitable woodland habitat and/or coniferous forest/gravelly soils not present within the study area to support this species.
Sidalcea neomexicana salt spring checkerbloom	None/None G4/S2 2B.2	Perennial herb. Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas. Alkali springs and marshes. Elevations: 50-5020ft. (15-1530m.) Blooms Mar-Jun.	No potential	Suitable springs and marshes not present within the study area to support this species; heavily disturbed vegetation precludes species from occurring.
Sphaerocarpos drewiae bottle liverwort	None/None G1/S1 1B.1	Ephemeral liverwort. Chaparral, coastal scrub. Liverwort in openings; on soil. Elevations: 295-1970ft. (90-600m.)	No potential	Suitable chaparral and coastal scrub habitat not present within study area.
Symphyotrichum defoliatum San Bernardino aster	None/None G2/S2 1B.2	Perennial rhizomatous herb. Cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, meadows and seeps, valley and foothill grassland. Vernally mesic grassland or near ditches, streams and springs; disturbed areas. Elevations: 5-6695ft. (2-2040m.) Blooms Jul-Nov.	Low potential	Marginally suitable habitat present adjacent to Salt Creek to support species; however, heavily disturbed and actively maintained vegetation within the study area precludes this species from occurring throughout the study area.
Texosporium sancti-jacobi woven-spored lichen	None/None G3/S2 3	Crustose lichen (terricolous). Chaparral. Open sites; in California with *Adenostoma fasciculatum, Eriogonum, Selaginella.* Found on soil, small mammal pellets, dead twigs, and on Selaginella. Elevations: 195-2165ft. (60-660m.)	No potential	Suitable chaparral and herbaceous scrub habitat not present within study area to support this species.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Tortula californica California screw moss	None/None G2G3/S2? 1B.2	Moss. Chenopod scrub, valley and foothill grassland. Moss growing on sandy soil. Elevations: 35-4790ft. (10-1460m.)	No potential	Suitable habitat not present within the study area to support this species.

Regional Vicinity refers to within a 9-quad search radius of site.

Status (Federal/State)

FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FD = Federal Delisted
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List

CRPR (CNPS California Rare Plant Rank)

1A = Presumed extirpated in California, and rare or extinct elsewhere
1B = Rare, Threatened, or Endangered in California and elsewhere
2A = Presumed extirpated in California, but common elsewhere
2B= Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension

.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)
.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)

Other Statuses

G1 or S1 Critically Imperiled Globally or Subnationally (state)
G2 or S2 Imperiled Globally or Subnationally (state)
G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)
G4/5 or S4/5 Apparently secure, common and abundant
GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery

Additional notations may be provided as follows

T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)
Q – Questionable taxonomy that may reduce conservation priority
? – Inexact numeric rank

Special Status Wildlife Species in the Regional Vicinity of the Project Site

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Invertebrates				
Bombus crotchii Crotch's bumble bee	None/SCE G2/S2	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia*, and *Eriogonum.*	Moderate potential	Non-native grassland habitat supports potential occurrence of this species
Bombus pensylvanicus American bumble bee	None/None G3G4/S2	Long-tongued; forages on a wide variety of flowers including vetches (*Vicia*), clovers (*Trifolium*), thistles (*Cirsium*), sunflowers (*Helianthus*), etc. Nests above ground under long grass or underground. Queens overwinter in rotten wood or underground.	Moderate potential	Study area possesses vegetation to support potential occurrence of this species
Branchinecta lynchi vernal pool fairy shrimp	FT/None G3/S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	No potential	Study area does not possess rain-filled pools or clear water/basalt-flows to support species
Branchinecta sandiegonensis San Diego fairy shrimp	FE/None G2/S1	Endemic to San Diego and Orange County mesas. Vernal pools.	No potential	Study area does not possess vernal pools to support species
Euphydryas editha quino quino checkerspot butterfly	FE/None G4G5T1T2/S1S2	Sunny openings within chaparral and coastal sage shrublands in parts of Riverside and San Diego counties. Hills and mesas near the coast. Need high densities of food plants *Plantago erecta, P. insularis,* and *Orthocarpus purpurescens*.	No potential	Study area does not possess suitable vegetation to support species, no hills and mesas present near the coast to support species occurrence
Linderiella occidentalis California linderiella	None/None G2G3/S2S3	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and total dissolved solids.	No potential	Heavily disturbed and maintained vegetation preclude species from occurring within study area
Linderiella santarosae Santa Rosa Plateau fairy shrimp	None/None G1G2/S1	Found only in the vernal pools on Santa Rosa Plateau in Riverside County. Southern basalt flow vernal pools.	No potential	Study area does not possess vernal pools to support species
Streptocephalus woottoni Riverside fairy shrimp	FE/None G1G2/S2	Endemic to Western Riverside, Orange, and San Diego counties in areas of tectonic swales/earth slump basins in grassland and coastal sage scrub. Inhabit seasonally astatic pools filled by winter/spring rains. Hatch in warm water later in the season.	No potential	Study area does not possess rain-filled pools or clear water/basalt-flows to support species; heavily disturbed Salt Creek does not support species

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Fish				
Gila orcuttii arroyo chub	None/None G1/S2 SSC	Native to streams from Malibu Creek to San Luis Rey River basin. Introduced into streams in Santa Clara, Ventura, Santa Ynez, Mojave and San Diego River basins. Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	No potential	Heavily disturbed Salt Creek preclude species from occurring within study area
Amphibians				
Spea hammondii western spadefoot	FPT/None G2G3/S3S4 SSC	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	No potential	Study area does not possess vernal pools to support species
Taricha torosa Coast Range newt	None/None G4/S4 SSC	Coastal drainages from Mendocino County to San Diego County. Lives in terrestrial habitats and will migrate over 1 km to breed in ponds, reservoirs and slow-moving streams.	No potential	Study area does not possess adequate water bodies and/or coastal drainages to support species or species' breeding habitat.
Reptiles				
Actinemys pallida southwestern pond turtle	FPT/None G2G3/SNR SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying. Occurs in southern California from Monterey County south to Los Angeles, Riverside, and San Diego Counties into northern Baja California, Mexico.	No potential	study area does not possess adequate water bodies and/or basking site to support species
Anniella stebbinsi Southern California legless lizard	None/None G3/S3 SSC	Generally, south of the Transverse Range, extending to northwestern Baja California. Occurs in sandy or loose loamy soils under sparse vegetation. Disjunct populations in the Tehachapi and Piute Mountains in Kern County. Variety of habitats; generally, in moist, loose soil. They prefer soils with a high moisture content.	Low potential	Study area contains sandy, loose loamy soils; however, highly disturbed vegetation and dry soils within and around the remnants of Salt Creek contain marginal habitat to support species.
Arizona elegans occidentalis California glossy snake	None/None G5T2/S2 SSC	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	Low potential	Study area contains sandy, loose loamy soils to potentially support species; however, highly disturbed vegetation does not provide suitable habitat to support species

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Aspidoscelis hyperythra orange-throated whiptail	None/None G5/S2S3 WL	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food: termites.	Low potential	Study area contains sandy, loose loamy soils to potentially support species; however, highly disturbed vegetation does not provide suitable habitat to support species
Aspidoscelis tigris stejnegeri coastal whiptail	None/None G5T5/S3 SSC	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.	Low potential	Marginally suitable habitat present to support species
Coleonyx variegatus abbotti San Diego banded gecko	None/None G5T5/S1S2 SSC	Coastal and cismontane Southern California. Found in granite or rocky outcrops in coastal scrub and chaparral habitats.	Low potential	Study area contains marginally suitable/patchy rocky habitat to support species
Crotalus ruber red-diamond rattlesnake	None/None G4/S3 SSC	Chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slopes of the mountains. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	Low potential	Study area contains patchy rocky areas and minimal vegetation to support species
Diadophis punctatus modestus San Bernardino ringneck snake	None/None G5T2T3/S2?	Most common in open, relatively rocky areas. Often in somewhat moist microhabitats near intermittent streams. Avoids moving through open or barren areas by restricting movements to areas of surface litter or herbaceous veg.	Low potential	Minimal vegetation is present throughout the study area; however, patchy rocky areas provides marginal suitable habitat to support species
Phrynosoma blainvillii coast horned lizard	None/None G4/S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Low potential	Marginally suitable habitat present throughout the study area to support species, including sandy soils and patchy loose soil
Salvadora hexalepis virgultea coast patch-nosed snake	None/None G5T4/S3 SSC	Brushy or shrubby vegetation in coastal Southern California. Require small mammal burrows for refuge and overwintering sites.	Low potential	Vegetation within study area is heavily disturbed; however, marginally suitable small mammal burrows present throughout study area
Thamnophis hammondii two-striped gartersnake	None/None G4/S3S4 SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	No potential	Vegetation surrounding Salt Creek is highly disturbed; study area is does not contain suitable freshwater habitat to support species

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Thamnophis sirtalis pop. 1 south coast gartersnake	None/None G5T1T2/S1S2 SSC	Southern California coastal plain from Ventura County to San Diego County, and from sea level to about 850 m. Marsh and upland habitats near permanent water with good strips of riparian vegetation.	No potential	Study area does not contain marsh and upland habitat near patchy stagnant water within Salt Creek to support species
Birds				
Accipiter cooperii Cooper's hawk	None/None G5/S4 WL	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	Present	Species was observed during the field survey.
Agelaius tricolor tricolored blackbird	None/ST G1G2/S2 SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	No potential	No suitable foraging area containing open water and protected nesting substrate to support species
Aimophila ruficeps canescens southern California rufous-crowned sparrow	None/None G5T3/S4 WL	Resident in Southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.	Low potential	Marginally suitable grass and forb patches present throughout study area to support species
Aquila chrysaetos golden eagle	None/None G5/S3 FP WL	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	No potential	No suitable vegetation/cliff and/or large tree habitat present to support species
Artemisiospiza belli belli Bell's sparrow	None/None G5T2T3/S3 WL	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range. Nest located on the ground beneath a shrub or in a shrub 6–18 inches above ground. Territories about 50 yards apart.	No potential	No suitable nesting habitat present within study area to support species
Athene cunicularia burrowing owl	None/SCE G4/S2 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Moderate potential	Suitable small burrows/culvert present within project site to support species
Buteo regalis ferruginous hawk	None/None G4/S3S4 WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Low potential	Marginally suitable foraging habitat present within study area to support species flyover
Buteo swainsoni Swainson's hawk	None/ST G5/S4	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Low potential	Marginally suitable foraging habitat present within study area to support species flyover

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	None/None G5T3Q/S2 SSC	Southern California coastal sage scrub. Wrens require tall opuntia cactus for nesting and roosting.	No potential	Highly disturbed vegetation throughout study area does not provide suitable habitat to support species
Circus hudsonius northern harrier	None/None G5/S3 SSC	Coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	No potential	No coastal salt and freshwater marsh habitat present to support species, nor suitable shrubby or marsh nesting areas
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT/SE G5T2T3/S1	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	No potential	No suitable forest habitat or riparian jungles to support species presence and/or nesting
Elanus leucurus white-tailed kite	None/None G5/S3S4 FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	No potential	No suitable dense forest, marsh, or open grassland habitat present within study area to support species
Eremophila alpestris actia California horned lark	None/None G5T4Q/S4 WL	Coastal regions, chiefly from Sonoma County to San Diego County. Also main part of San Joaquin Valley and east to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Low potential	Marginally suitable short grass habitat present within study area; however, highly disturbed vegetation not suitable to support species nesting
Haliaeetus leucocephalus bald eagle	FD/SE G5/S3 FP	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	No potential	No suitable live tree nesting habitat present within study area to support species
Lanius ludovicianus loggerhead shrike	None/None G4/S4 SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	No potential	No suitable dense shrub habitat present within study area, nor suitable tree habitat to support species' nesting and/or flyover
Plegadis chihi white-faced ibis	None/None G5/S3S4 WL	Shallow freshwater marsh. Dense tule thickets for nesting, interspersed with areas of shallow water for foraging.	No potential	No suitable freshwater marsh habitat present within study area to support species
Polioptila californica californica coastal California gnatcatcher	FT/None G4G5T3Q/S2 SSC	Obligate, permanent resident of coastal sage scrub below 2500 ft in Southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	No potential	Sufficient coastal sage scrub to support this species is absent from the study area.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Setophaga petechia yellow warbler	None/None G5/S3 SSC	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	Low potential	Marginally suitable habitat present within the highly disturbed riparian vegetation along Salt Creek; no suitable nesting habitat for species
Toxostoma bendirei Bendire's thrasher	None/None G4/S2 SSC	Migratory; local spring/summer resident in flat areas of desert succulent shrub/Joshua tree habitats in Mojave Desert. Nests in cholla, yucca, palo verde, thorny shrub, or small tree, usually 0.5 to 20 feet above-ground.	No potential	No suitable desert shrub/Joshua tree habitat present within the study area
Vireo bellii pusillus least Bell's vireo	FE/SE G5T2/S3	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	Low potential	Marginally suitable habitat within actively managed cattail/riparian willow scrub habitat along Salt Creek
Xanthocephalus xanthocephalus yellow-headed blackbird	None/None G5/S3 SSC	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds. Nests only where large insects such as *Odonata* are abundant, nesting timed with maximum emergence of aquatic insects.	Low potential	Marginally suitable habitat present along Salt Creek; however, heavy disturbance and maintained vegetation precludes this species from nesting within the study area
Mammals				
Antrozous pallidus pallid bat	None/None G4/S3 SSC	Found in a variety of habitats including deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in crevices of rock outcrops, caves, mine tunnels, buildings, bridges, and hollows of live and dead trees which must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Low potential	Marginally suitable rocky habitat present to support species roosting
Chaetodipus californicus femoralis Dulzura pocket mouse	None/None G5T3/S3	Found in a variety of habitats including coastal scrub, chaparral, and grassland in San Diego County, Baja California, and Mexico. Attracted to grass-chaparral edges.	No potential	No suitable coastal scrub, chaparral, and/or grassland habitat exists within study area to support species
Chaetodipus fallax fallax northwestern San Diego pocket mouse	None/None G5T3T4/S3S4	Inhabits coastal sage scrub, sagebrush scrub, grasslands, and chaparral communities. Found in open, sandy areas in southwestern California and northern Baja California. Prefers moderately gravelly and rocky substrates.	Low potential	Marginally suitable rocky habitat present to support species roosting

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Corynorhinus townsendii Townsend's big-eared bat	None/None G4/S2 SSC	Occurs throughout California in a wide variety of habitats. Most common in mesic sites, typically coniferous or deciduous forests. Roosts in the open, hanging from walls & ceilings in caves, lava tubes, bridges, and buildings. This species is extremely sensitive to human disturbance.	No potential	No suitable habitat exists within the study area to support species
Dipodomys merriami parvus San Bernardino kangaroo rat	FE/SE G5T1/S1 SSC	Alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and flood plains. Needs early to intermediate seral stages.	Low potential	Marginally suitable sandy loam substrates and alluvial fan vegetation within portions of the BSA.
Dipodomys stephensi Stephens' kangaroo rat	FT/ST G2/S3	Found primarily in annual & perennial grasslands but also occurs in coastal scrub & sagebrush with sparse canopy cover. Prefers buckwheat, chamise, brome grass & filaree. Will burrow into firm soil and use the burrows of California ground squirrels and pocket gophers. Occurs only in southern California.	Moderate potential	Suitable soil types and flood plain habitat exists to support species; occurrence identified within the last 10 years within less than 1.5 miles from the BSA.
Eumops perotis californicus western mastiff bat	None/None G4G5T4/S3S4 SSC	Occurs in open, semi-arid to arid habitats, including coniferous and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces and caves, and buildings. Roosts typically occur high above ground.	No potential	No suitable habitat exists within the study area to support species
Lasiurus xanthinus western yellow bat	None/None G4G5/S3 SSC	Occurs in arid regions of the southwestern United States. Typically found in riparian woodlands, oak or pinyon-juniper woodland, desert wash, palm oasis habitats, and urban or suburban areas. Roosts in trees, often between palm fronds.	No potential	No suitable habitat exists within the study area to support species
Lepus californicus bennettii San Diego black-tailed jackrabbit	None/None G5T3T4/S3S4	Occurs in Los Angeles, San Bernardino, Riverside, and San Diego Counties of southern California. Typically found in open shrub habitats. Will also occur in woodland habitats with open understory adjacent to shrublands.	No potential	No suitable habitat exists within the study area to support species due to high levels of disturbed vegetation
Neotoma lepida intermedia San Diego desert woodrat	None/None G5T3T4/S3S4 SSC	Occurs in scrub habitats of southern California from San Luis Obispo County to San Diego County.	No potential	No suitable habitat exists within the study area to support species due to high levels of disturbed vegetation

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Onychomys torridus ramona southern grasshopper mouse	None/None G5T3/S3 SSC	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.	Low potential	Suitable soil types and marginal vegetation occur within the study area to support this species; however, vegetation within study area is highly disturbed
Perognathus longimembris brevinasus Los Angeles pocket mouse	None/None G5T2/S1S2 SSC	Lower elevation grasslands and coastal sage communities in and around the Los Angeles Basin. Open ground with fine, sandy soils. May not dig extensive burrows, hiding under weeds and dead leaves instead.	Low potential	Marginally suitable soil type is present within the site/study area to support this species; however, heavily disturbed and actively maintained vegetation limits this species presence. No recorded occurrences found within 5 miles of the BSA
Perognathus longimembris internationalis Jacumba pocket mouse	None/None G5T2T3/S2 SSC	Desert riparian, desert scrub, desert wash, coastal scrub and sagebrush. Rarely found on rocky sites; uses all canopy coverages.	No potential	No suitable canopy coverage or desert riparian/scrub habitat present to support species

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/Observations
Taxidea taxus American badger	None/None G5/S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Low potential	Suitable soils present within study area; however, high levels of disturbance and lack of forested/herbaceous habitat limits species presence to burrow

Regional Vicinity refers to within a 9-quad search radius of site.

Status (Federal/State)

FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FD = Federal Delisted
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List

CRPR (CNPS California Rare Plant Rank)

1A = Presumed extirpated in California, and rare or extinct elsewhere
1B = Rare, Threatened, or Endangered in California and elsewhere
2A = Presumed extirpated in California, but common elsewhere
2B= Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension

.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)
.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)

Other Statuses

G1 or S1 Critically Imperiled Globally or Subnationally (state)
G2 or S2 Imperiled Globally or Subnationally (state)
G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)
G4/5 or S4/5 Apparently secure, common and abundant
GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery

Additional notations may be provided as follows

T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)
Q – Questionable taxonomy that may reduce conservation priority
? – Inexact numeric rank

Appendix C

Site Photographs



Photograph 1. Mediterranean grass grassland habitat along the western edge of unpaved Rice Road, facing north. January 21, 2025.



Photograph 2. Debris within the actively managed Salt Creek habitat running through the center of the BSA, facing east. January 21, 2025.



Photograph 3. Culvert adjacent to Rice Road within the temporary staging area. Potentially jurisdictional feature and suitable burrow for burrowing owl, facing south. January 21, 2025.



Photograph 4. Actively managed disturbed mixed cattail/riparian willow habitat, facing west. January 21, 2025.



Photograph 5. Disturbed/devloped rocky substrate along the central portion of the BSA, facing northeast. January 21, 2025.



Photograph 6. Ornamental trees adjacent to the dirt access road along Rice Road, facing west. January 21, 2025.



Photograph 7. Non-native grassland habitat actively managed along the western edge of the BSA and Rice Road, facing west. January 21, 2025.



Photograph 8. Mediterranean grass grassland habitat along the unpaved dirt access road adjacent to the temporary staging area, facing east. January 21, 2025.



Photograph 9. Salt grass flats habitat along the reaches of Salt Creek, facing northeast. January 21, 2025.



Photograph 10. Mediterranean grass grassland on the western edge of the BSA, containing emergent California buckwheat and non-nonative grasses, facing north. January 21, 2025.



Photograph 11. Potential suitable small mammal burrow within the developed/disturbed habitat within the BSA, facing west. January 21, 2025.



Photograph 12. Overview of the temporary staging area at Rice Road, facing northwest. January 21, 2025.



Photograph 13. Paved portion of Rice Road, containing overview of temporary staging area, facing south. January 21, 2025.



Photograph 14. V-ditch and disturbed habitat located in the temporary staging area on the east side of Rice Road, facing south. January 21, 2025.

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Appendix D

Floral and Faunal Compendium

Plant Species Observed in the Biological Study Area on January 21, 2025

Scientific Name	Common Name	Status	Native or Introduced
Shrubs			
Baccharis pilularis	coyote brush	–	Native
Callistemon sp.	bottle brush	–	Introduced
Eriogonum fasciculatum	California buckwheat	–	Native
Nicotiana glauca	tree tobacco	–	Introduced, Cal-IPC Moderate
Salsola tragus	Russian thistle	–	Introduced, Cal-IPC Limited
Herbs			
Ambrosia psilostachya	common ragweed	–	Native
Brassica nigra	black mustard	–	Introduced, Cal IPC-Moderate
Carduus pycnocephalus	Italian thistle	–	Introduced, Cal IPC-Moderate
Deinandra fasciculata	clustered tarweed	–	Native
Erigeron canadensis	horseweed	–	Introduced
Heliotropium curassavicum	heliotrope	–	Native
Heterotheca grandiflora	telegraph weed	–	Native
Hirschfeldia incana	short-pod mustard	–	Introduced, Cal IPC-Moderate
Lactuca serriola	prickly lettuce	–	Introduced
Oncosiphon pilulifer	stinknet	–	Introduced, Cal-IPC High
Typha sp.	cattail	–	Native
Trees			
Salix gooddingii	Goodding's willow	–	Native
Schinus molle	Peruvian pepper	–	Introduced, Cal-IPC Limited
Tamarix ramosissima	saltcedar	–	Introduced, Cal-IPC High
Grasses			
Avena barbata	slender oat	–	Introduced, Cal-IPC High
Bromus diandrus	ripgut brome	–	Introduced, Cal-IPC Moderate
Bromus madritensis	red brome	–	Introduced, Cal-IPC High
Distichlis spicata	desert saltgrass	–	Native

Sources: CNPS Rare Plant Inventory (CNPS 2025a), CNPS Calscape (CNPS 2025b), California Invasive Plant Council (Cal-IPC 2025); Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2025b)

Wildlife Species Observed in the Biological Study Area on January 21, 2025

Scientific Name	Common Name	Status	Native or Introduced
Birds			
Accipiter cooperii	Cooper's hawk	WL	Native
Buteo jamaicensis	red-tailed hawk	–	Native
Calypte anna	Anna's hummingbird	–	Native
Corvus corax	common raven	–	Native
Corvus brachyrhynchos	American crow	–	Native
Zonotrichia leucophrys	white-crowned sparrow	–	Native

Sources: CDFW Special Animals List (CDFW 2025a); WL = CDFW Watch List Species

APPENDIX C: CULTURAL RESOURCES REPORT (CONFIDENTIAL)

APPENDIX D: GEOTECHNICAL INVESTIGATION REPORT

ENGEN CORPORATION
Geotechnical & Environmental Services

Geotechnical Investigation Report

Rice Road Replacement Pipeline
Rice Road
Winchester Area, California

Project Number: 4891GS

May 14, 2024

41625 Enterprise Circle S., B-2
Temecula, CA 92590

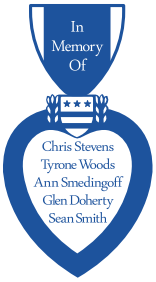
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In Memory Of
Chris Stevens
Tyrone Woods
Ann Smedingoff
Glen Doherty
Sean Smith

May 14, 2024

Jeffery J. Endersby, PE, Senior Project Manager
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Subject: **Geotechnical Investigation – *Rice Road Pipeline Project***
Project Number: 4891GS

Reference:
1. ***EnGEN Corporation, Tabletop Geotechnical Feasibility Survey for*** Proposed Trenchless Pipeline Construction, Rice Road Pipelines Project, Winchester area of Riverside County, Project Number: 4891GSGS, Dated February 2, 2023
2. ***Terra Geosciences, Seismic Refraction Survey,*** EMWD Rice Road Pipeline Alignment, Rice Road and Olive Avenue, Winchester, Riverside County, California, Project No: 233939-1, Dated: April 17, 2023.

Mr. Endersby,

In accordance with your request and signed authorization, representatives of this firm visited the subject site on September 28, 2022 to visually observe the surface conditions, conduct subsurface exploration and testing, and gather samples of representative site earth materials. Laboratory testing was performed on these samples. Recommendations for trenchless excavation operations using the micro tunneling method are provided in the subsequent sections of this report.

1.0 EXECUTIVE SUMMARY

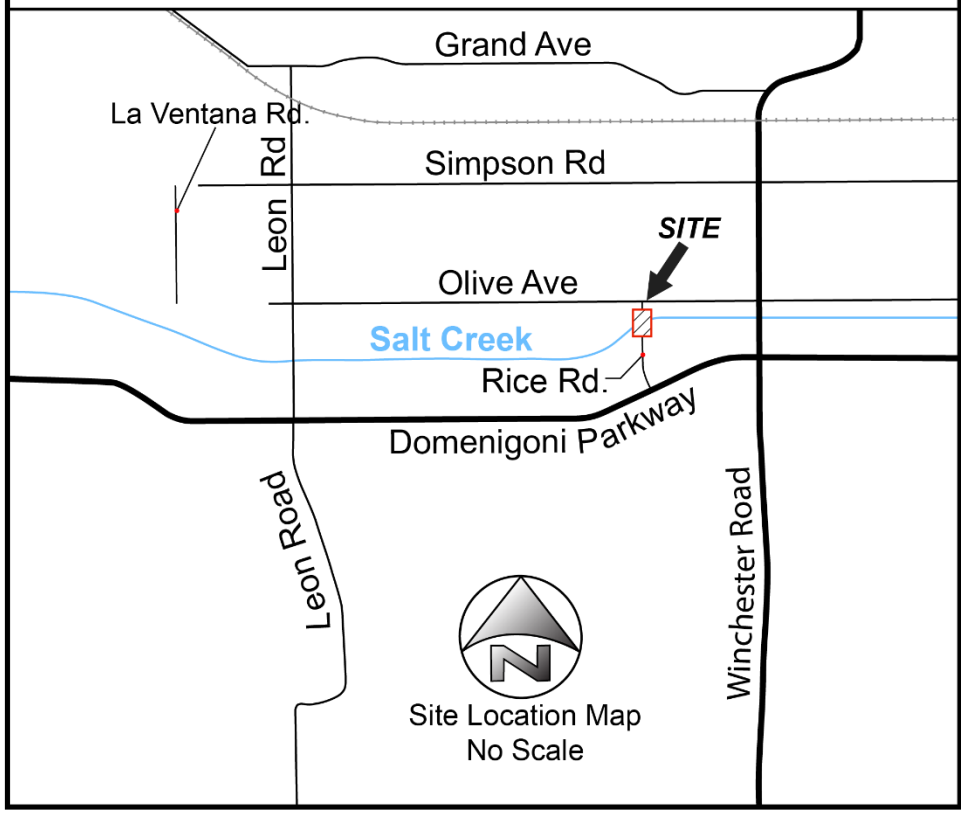
1.1 General:

Eastern Municipal Water District (EMWD) is contemplating a Trenchless Construction operation to extend existing potable water pipelines and recycled water pipelines across Salt Creek, spanning from Rice Road to Olive Avenue. We have thoroughly examined relevant technical publications and past geotechnical investigation reports in the vicinity of the proposed pipeline alignment to enhance our understanding of the regional and site-specific geological and geotechnical conditions that will influence the project. Moreover, we conducted a site reconnaissance to visually assess the current surface conditions along the proposed pipeline alignment. Additionally, drilling and seismic refraction operations were carried out in the areas designated for the pipeline to gain deeper insights into subsurface conditions. This investigation encapsulates the general findings derived from the site reconnaissance, review of geotechnical investigation reports from adjacent properties, drilling and sampling operations, and a seismic refraction survey conducted along the proposed pipeline project.

1.2 Proposed Project Description:

The proposed project includes construction of one 24-inch diameter potable water pipeline across Salt Creek using micro tunneling trenchless construction methods at an approximate depth of 25 to 30 feet in the vicinity of the Creek embankment areas. The project also includes conversion of the existing 12-inch potable water line to a recycled water line.

FIGURE 1 - SITE LOCATION MAP



1.3 Feasibility for Intended Use:

It is the opinion of this firm that the proposed Rice Road Pipeline alignment project is feasible from a geotechnical standpoint, provided that the findings and recommendations presented in this report are incorporated into the design and construction of the proposed pipelines.

1.4 Anticipated Pipelines Alignment Geotechnical Conditions:

The alignment under consideration for the proposed pipelines runs north to south, crossing Salt Creek as depicted in Figure 1. Findings from drilling, sampling, seismic refraction surveys, and previous geotechnical studies (as per Reference No. 1 Report by our firm and Reference No. 2 Report by others) indicate that the pipeline will primarily traverse through typical alluvial soil channel deposits. These deposits are characterized by layers of silty sands (SM), sands mixed with silt (SP-SM), and clean sands (SP), which may include gravel and cobble components (detailed in the Geotechnical Boring Log Summary, Appendix 3). At approximately 25 feet below the ground surface (bgs), these alluvial soil deposits are expected to be of moderate density along the proposed alignment. Notably, in the

southern segment at Boring-2, weathered granitic bedrock was discovered at a depth of about 25 feet below ground surface (bgs), presenting a significantly denser profile.

1.5 Liquefaction and Subsidence Hazard:

1.5.1 General

We were not allowed to drill boreholes in locations across the Salt Creek channel proper to evaluate the subsurface geotechnical conditions within the proposed pipeline alignment due to environmentally sensitive habitat constraints. Thus, the potential for liquefaction within the creek and our findings are based on assumptions grounded in our knowledge of the phenomenon, supplemented by information interpreted from the borings and laboratory tests conducted during this investigation on the north and south channel embankments. It is important to acknowledge that geological soil profiles and conditions can vary significantly over short distances. Consequently, drilling boreholes along the proposed alignment in the Salt Creek Channel is essential for a thorough understanding of the geotechnical and geological conditions that will impact the planned subterranean drilling operations.

1.5.2 Professional Opinion:

The condition of the soils below the groundwater level varies in density and type, indicating that liquefaction could potentially occur if a seismic event takes place during construction. However, it is not possible to accurately predict such an event. The main concern should liquefaction occur aside from the potential safety concerns for construction workers is settlement of the supporting soils below the pipeline and/or the drilling operations themselves. A significant settlement is not considered likely however. The ability to calculate the amount of vertical settlement is not possible without samples along the alignment which we were not allowed to secure. Since we are not at liberty to estimate settlement without site specific data, these general opinions may be helpful in judging the need for additional information withing the creek proper which we highly recommend.

1.5.3 Lateral Spread:

Lateral spreading in river and stream beds is the horizontal movement of sediment caused by seismic activity or soil liquefaction. This typically occurs in loose, saturated soils but is unlikely based on the soil conditions observed during our investigation. The borings on the north and south embankments of the proposed pipeline alignment showed well-consolidated materials above the water table and slopes exceeding 5 degrees, minimizing the risk.

1.5.4 Plan Review:

After the initial design plans are completed, it is recommended that they be reviewed by our office so that supplemental recommendations can be provided, if necessary.

1.6 Groundwater:

Field measurements were taken from the top of the embankment along the northerly portion of the proposed Rice Road Pipelines Alignment to the approximate location of Boring-1 (B-1) and Boring-2 (B-2). Groundwater depth at B-1 for the Rice Road Pipelines Project was found to be approximately

15.4-feet bgs and 27.5-feet bgs at B-2 at the time of drilling and sampling operations. Groundwater depth within the Salt Creek proper should be anticipated to be shallower than those of the borings at the top of the Channel embankments. Without borings being allowed within the channel itself it is impossible to identify accurately what the groundwater depth will be. The groundwater monitoring well constructed on the east Salt Creek embankment was measured on April 19, 2024, and found to be at an elevation 9-feet below existing ground surface. Near surface groundwater will be a factor in the construction operations and as a result a dewatering program should be designed by the contractor that will lower the groundwater table to a depth of no less than 5-feet below excavation level, otherwise it will result in base instability and flowing sides. Given the cohesionless nature of the soils within the construction zone, significant dewatering through point wells will be required.

1.7 Fault Hazards:

There are no known active faults projecting toward or crossing the proposed Rice Road alignment project and the proposed pipelines alignment is not situated within an Alquist-Priolo Fault Hazards Zone. However, the proposed alignment is located in a seismically active area of Southern California. Ground shaking from earthquakes associated with nearby and distant faults may occur during the lifetime of the project.

1.8 Seismic Hazards:

The potential of seismic hazards due to the secondary effects of earthquakes including surface fault rupture, lateral spread, landslides, and earthquake-induced flooding is considered to be low. Based on the site location, tsunamis or seiches do not pose a hazard. The seismic coefficients derived from the 2022 California Building Code (CBC) tables are presented in § 6.5 of this report.

1.9 Expansive Soils:

Based on the laboratory test results conducted on representative samples of the on-site earth materials, we anticipate the soils in contact with the proposed pipeline will have very low expansive properties.

1.10 Corrosive Soils:

Laboratory test results conducted on representative samples of the on-site earth materials, we anticipate the soils in contact with the proposed pipeline will have non-corrosive properties.

1.11 Conclusions:

The construction of a trenchless micro-tunneling operations for the proposed Rice Road Pipeline project, is feasible from a geotechnical standpoint provided the recommendations made in the subsequent sections of this report are incorporated into the design and construction of the project.

2.0 SITE AND PROJECT DESCRIPTION

2.1 General:

The southerly extent of the proposed Rice Road pipeline alignment is located east of Western Hills Drive and north of Domenigoni Parkway. It is an improved paved roadway with a relatively level grade trending in a north/south direction toward the southerly bank of Salt Creek where the pavement terminates at the top of the channel embankment. The unimproved Rice Road easement extends

across natural ground in Salt Creek and intersects with the southern edge of the improved roadway of Olive Avenue north of Salt Creek Channel and east of KB Homes Residential Tract 31632. The channel embankments on either side of Salt Creek are relatively gently sloping at a gradient of approximately 3:1 or greater. The channel embankments do not present a hazard from an equipment and personnel safety standpoint for the planned drilling and construction operations.

3.0 SCOPE OF WORK AND PROJECT DESCRIPTION:

3.1 Scope of Work:

The scope of this study was to provide a preliminary geotechnical assessment of the surface and subsurface conditions within the proposed pipeline alignment area, and to provide recommendations for the design and construction operations of the proposed replacement pipeline from a geotechnical perspective. The scope included: 1) site reconnaissance and mapping, 2) subsurface exploration and field testing, 3) sampling and laboratory testing of on-site materials, 4) engineering analysis of field and laboratory data, 5) review of near site geotechnical reports, and 6) preparation of this report. In December 2022, a contract amendment was issued to obtain an encroachment permit from Riverside County Flood Control to conduct two borings within Salt Creek. The amendment also included additional laboratory testing and a seismic refraction survey to evaluate bedrock excavation characteristics.

3.2 Project Description:

The proposed Rice Road Pipelines will encompass approximately 800 linear feet of new water pipeline utilizing approximately 800 feet of trenchless methods across Salt Creek from Rice Road to Olive Avenue (see Figure 1). It is our understanding that the trenchless drilling operations are intended to protect the integrity of the natural habitat that exists along the pipelines' alignment crossing Salt Creek. Improvement plans for the proposed micro tunneling operations and pipelines details are not available at this writing. This project also includes conversion of approximately 700 linear feet of existing 12-inch water line to a recycled water line.

4.0 FIELD STUDY:

4.1 Field Reconnaissance:

The field study for this project included a reconnaissance, a pre-drilling site walk, dig alert marking, mapping, geologic mapping and subsurface exploration.

4.2 Borings:

Drilling operations were conducted at the subject location on September 28, 2022. The purpose of the subsurface exploration was to assess the underlying earth materials' existing condition and geotechnical properties as well as the presence of groundwater. Two exploratory borings (B-1 through B-2) were advanced along the proposed trend of the replacement pipeline. The borings were accomplished through the use of a CME 75 truck-mounted drill rig equipped with 8-inch outside diameter hollow-stem augers. The maximum depth explored was approximately 55 feet below the

existing ground surface. Bulk and relatively undisturbed samples of the earth materials encountered were obtained at various depths in the exploratory borings and transported to our soil laboratory for verification of field classifications and testing. Bulk samples were obtained from cuttings developed during the excavation process and represent a mixture of the soils within the depth indicated on the logs. Relatively undisturbed samples of the earth materials encountered were obtained by driving a thin-walled steel sampler lined with 1.0-inch high, 2.42-inch inside diameter brass rings. The sampler was driven with successive drops of a 140-pound weight having a free fall of approximately 30-inches. The blow counts for each successive 6.0-inches of penetration, or fraction thereof, are shown in the Geotechnical Boring Logs presented in the Appendix. The ring samples were retained in close-fitting moisture-proof containers and transported to our laboratory for testing. B-1 was set up as a monitoring well. B-2 was backfilled with soil cuttings and the pavement was patched with rapid-set concrete. The approximate locations of the exploratory borings are shown on Plate 1.

4.3 Seismic Refraction Study:

The seismic refraction study was conducted by Terra Geosciences at the subject location on April 15, 2023 (see Plate 1). The survey found 3 different layers within the proposed pipelines' alignment. The uppermost layer (V1) consisted of velocities typical for unconsolidated younger alluvial deposits or possible fill material. The second layer (V2) consisted of velocities that correspond to native older alluvial deposits or possibly highly weathered decomposed granitic bedrock. Underlying Seismic Line S-4, the V2 layer has a velocity change at an elevation between 1430-1434 that is consistent with saturated older alluvial material (V2a). The V2/V2a contact is believed to represent the interface of the groundwater table. The third layer (V3) consisted of velocities that are typical of slightly weathered granitic bedrock. A cross section view can be found on the Rice Road Seismic Line Locations on Plate 1. A summary of the data analysis and conclusions can be found on pages 6 and 7 of the Referenced No. 2 report.

5.0 LABORATORY TESTING

The results of laboratory tests performed on samples of earth material obtained during the site visit are presented in the attached Exhibits. Following is a listing and brief explanation of the laboratory tests performed. The samples obtained during the field study will be discarded 30 days after the date of this report.

5.1 Classification:

The field classification of soil materials encountered during our site visit were verified in the laboratory in general accordance with the Unified Soils Classification System, ASTM D 2488, Standard Practice for Determination, and Identification of Soils (Visual-Manual Procedures). The final classification is shown in the Moisture Density Test Report presented in the Appendix.

5.2 Maximum Dry Density/Optimum Moisture Content Relationship Test:

Maximum dry density/optimum moisture content relationship determinations were performed on samples of near-surface earth material in general accordance with ASTM 1557 procedures using a

4.0-inch diameter mold. Samples were prepared at various moisture contents and compacted in five (5) layers using a 10-pound weight dropping 18-inches and with 25 blows per layer. A plot of the compacted dry density versus the moisture content of the specimens is constructed and the maximum dry density and optimum moisture content is determined from the plot.

5.3 Expansion Test:

Laboratory expansion tests were performed on samples of near-surface earth material in general accordance with CBC 18-2. In this testing procedure, a remolded sample is compacted in two (2) layers in a 4.0-inch diameter mold to a total compacted thickness of approximately 1.0-inch by using a 5.5-pound weight dropping 12-inches and with 15 blows per layer. The sample should be compacted at a saturation between 49 and 51 percent. After remolding, the sample is confined under a pressure of 144 pounds per square foot (psf) and allowed to soak for 24 hours. The resulting volume change due to the increase in moisture content and the Expansion Index (EI) calculated.

5.4 Direct Shear Test:

Direct shear tests were performed on select samples of near-surface earth material in general accordance with ASTM D 3080 procedures. The shear machine is of the constant strain type. The shear machine is designed to receive a 1.0-inch high, 2.42-inch diameter ring sample. Specimens from the sample were sheared at various pressures normal to the face of the specimens. The specimens were tested in a submerged condition. The maximum shear stresses were plotted versus the normal confining stresses to determine the shear strength (cohesion and angle of internal friction).

5.5 Grain Size Distribution Test:

An evaluation was performed on selected representative soil samples in general accordance with ASTM D 422. This “method determines the distribution of particle sizes in soils which allows for the proper classification according to the Unified Soils Classification System (USCS). In this test procedure, a weighed sample is processed through multiple sieves designated by their size generally ranging from a No. 4 (0.25-inch) to a No. 200 and the percentage of material passing each sieve is weighed and recorded with the results plotted in graph form.

5.6 Consolidation Test:

Settlement predictions of the on-site soil and compacted fill behavior under load were made, based on consolidation tests that were performed in general accordance with ASTM D 2435 procedures. The consolidation apparatus is designed to receive a 1.0-inch high, 2.416-inch diameter ring sample. Porous stones are placed in contact with the top and bottom of each specimen to permit addition and release of pore water and pore pressure. Loads normal to the face of the specimen are applied in several increments in a geometric progression under both field moisture and submerged conditions. The resulting changes in sample thickness are recorded at selected time intervals. Water was added to the test apparatus at various loads to create a submerged condition and to measure the collapse potential (hydroconsolidation) of the sample. The resulting change in sample thickness was recorded.

5.7 In-Situ Moisture Content and Density Test:

The in-situ moisture content and dry density were determined in general accordance with ASTM D 2216 and ASTM D 2937 procedures, respectively, for each selected undisturbed sample obtained. The dry density is determined in pounds per cubic foot and the moisture content is determined as a percentage of the oven dry weight of the soil.

5.8 R-Value:

An evaluation was performed on a selected representative soil sample in general accordance with California Test Method 301. The resistance (R-Value) test method is used to measure the potential strength of subgrade, subbase, and base course materials for use in road pavements.

5.9 Soluble Sulfate Test:

Samples of the near-surface earth materials were obtained for soluble sulfate testing for the site. The concentration of soluble sulfates was determined in the general conformance with California Test Method 417 procedures.

5.10 pH/Minimum Resistivity:

Sample(s) were tested for pH and minimum resistivity in general accordance with CTM 643.

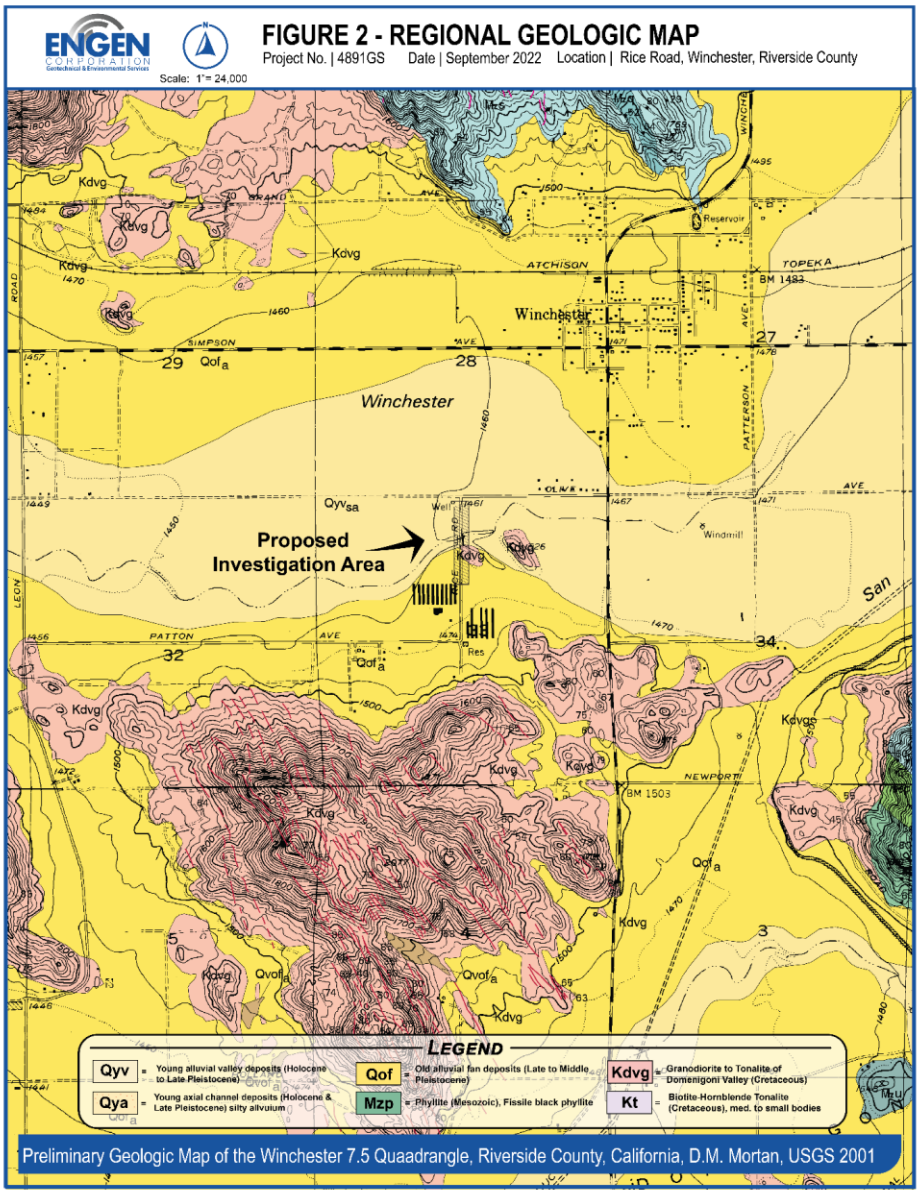
5.11 Chloride Content:

Sample(s) of near surface soils were tested for chloride content in general conformance with CTM 422.

6.0 GEOLOGY AND SEISMICITY

6.1 Regional Geologic Setting:

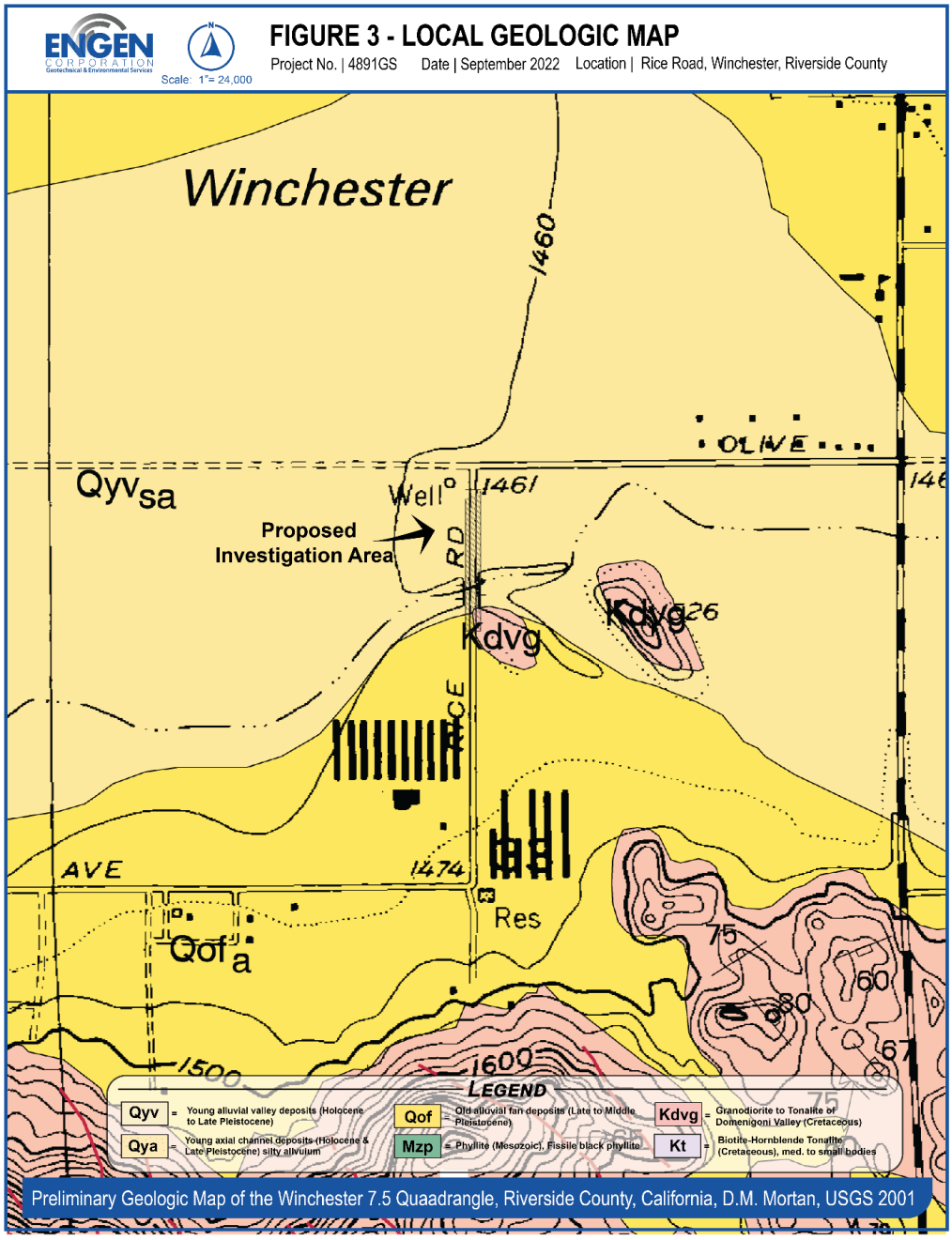
The site is located in the Northern Peninsular Range on the southern sector of the structural unit known as the Perris Block. The Perris Block is bound on the northeast by the San Jacinto Fault Zone, on the southwest by the Elsinore Fault Zone, and on the north by the Cucamonga Fault Zone. The southern boundary of the Perris Block is not as distinct but is believed to coincide with a complex group of faults trending southeast from the Murrieta, California area (Kennedy, 1977). The Peninsular Range is characterized by large Mesozoic age intrusive rock masses flanked by volcanic, metasedimentary, and sedimentary rocks. Various thicknesses of colluvial/alluvial sediments derived from the erosion of the elevated portions of the region fill the low-lying areas. Man-made fills are located across the western and central portions of the site. The earth materials encountered on the subject site are described in more detail in subsequent sections of this report.



6.2 Local Geologic Setting:

Based on geologic a review of the USGS maps, the site is underlain by young alluvial valley deposits of Holocene to late Pleistocene age. These soil deposits typically consist of interbedded silty sands (SM) and sand/silt (ML)/clay (SC) mixtures, and gravelly sands (GW-GP) with possible cobbles.

Figure 3 depicts a portion of the U.S.G.S. Preliminary Geologic Map of the 7.5' Winchester Quadrangle (D. R. Morton, 1991) depicting the mapped geologic units within the proposed project pipelines alignment.



6.3 Faulting and Seismicity:

The active Anza segment of the San Jacinto Fault is located approximately 9.37 miles northeast of the site. Table 1 lists selected known principal active faults mapped within approximately 40 miles that may affect the subject site and the maximum moment magnitude (Mmax) as published by the United States Geological Survey (USGS, 2020a). The approximate fault-to-site distances were calculated using the USGS fault parameters web-based design tool (USGS, 2020a).

FIRGURE 4 FAULT HAZARD MAP

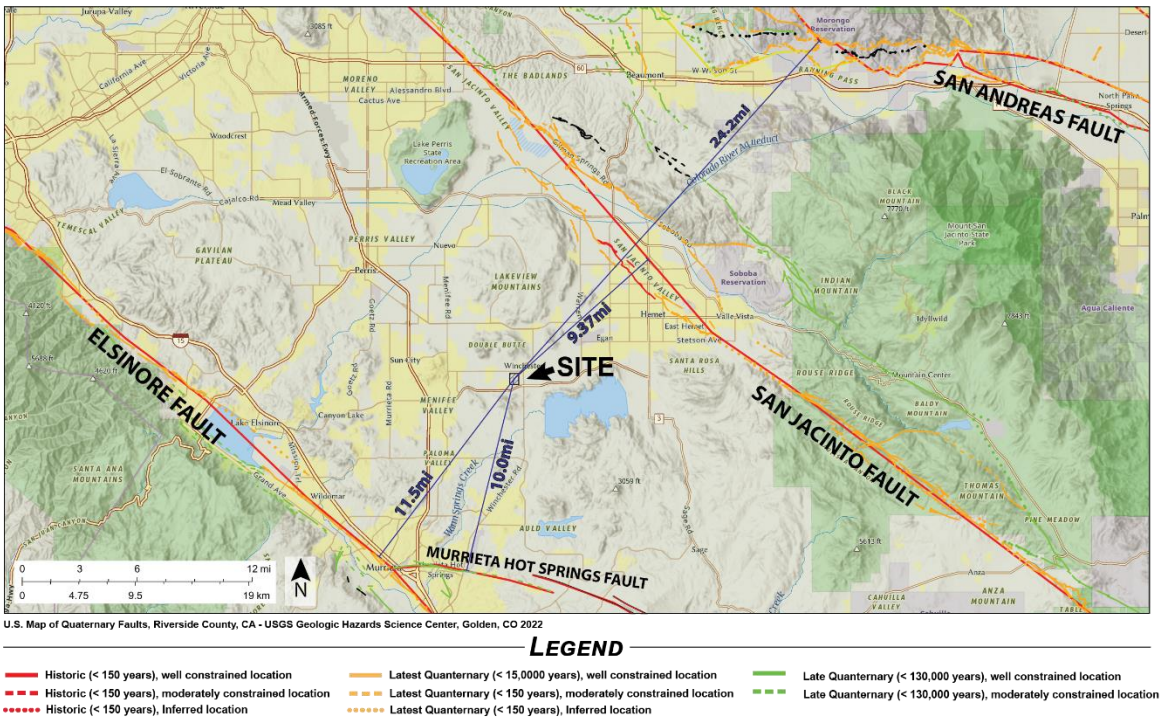


Table 1 - Principal Active Faults Fault

Fault	Approximate Fault-to-Site Distance (miles)
San Jacinto Fault	9.37
Murrieta Hots Springs Fault	10.0
Elsinore Fault	11.5
San Andreas Fault	24.2

In general, hazards associated with seismic activity include surface ground rupture, strong ground motion, liquefaction, and tsunamis. A brief description of these hazards and the potential for their occurrences on site are discussed below.

7.0 FINDINGS

7.1 Existing Pavement Sections:

In general, the borings indicate the existing Asphaltic Concrete (AC) pavement sections on Rice Road north and south of the Salt Creek embankments to be of 4-inches of asphalt underlain by 4-inches of Class II base material. However, based on the Riverside County Department of Transportation current minimum pavement structural pavement sections for collector streets with a Traffic Index of 7.0, is 4.2-inches of Asphalt over 13.2 inches of Class II base. However R-Value testing of subgrade earth materials should be performed at finish grade elevations and a structural pavement design based on the Traffic Index and subgrade R-Value test results.

7.2 Description of the Subsurface Soil Profile:

The proposed pipeline route is underlain by a combination of man-made artificial fill, alluvium, and

granitic bedrock. At higher elevations along the pipeline's trajectory, it is predominantly artificial fill and young alluvium that are present. Notably, at a depth of approximately 25 feet at Boring 2 (B-2), located in the southern segment of the proposed pipeline, weathered granitic bedrock was encountered, with refusal occurring at about 32.2 feet. Attempts to retrieve undisturbed samples of the bedrock were unsuccessful; however, decomposed granite (DG) samples were obtained. For a comprehensive analysis of the various earth materials identified at the site, refer to the Earth Materials section of this report. Detailed exploratory boring logs, which document the earth materials discovered during subsurface exploration, can be found in the Appendix.

7.3 Seismic Hazards:

Because the proposed development is located in tectonically active southern California, it will likely experience some effects from earthquakes. The type or severity of seismic hazards affecting the site is mainly dependent upon the distance to the causative fault, the intensity of the seismic event, and the soil characteristics. The seismic hazard may be primary, such as surface rupture and/or ground shaking, or secondary, such as liquefaction or dynamic settlement. The following is a site-specific discussion about ground motion parameters, earthquake induced settlement hazards, and liquefaction. The purpose of this analysis is to identify potential seismic hazards and propose mitigations, if necessary, to an acceptable level of risk.

7.4 Seismic Design Parameters:

The 2022 California Building Code (CBC) seismic design parameters for the subject site were obtained from the seismic design mapping web application by the Structural Engineers Association of California (SEAOC) using ASCE 7-22 seismic maps and by using 2022 CBC Tables 11.4-1 and 11.4-2. Site Class D was assumed. Obtaining site-specific shear wave velocities was not within the scope of work. However, they may be obtained on request.

Description	Design Parameters
Site Latitude:	**33.698368**
Site Longitude:	-117.093631
Site Class:	D
Spectral Response (Short):	(0.2 sec) – S_s: 1.5
Spectral Response – (1-Second):	(1.0 sec) – S_1: 0.54
Short Period Site Coefficient:	Fa: 1.0
1-Second Period Site Coefficient:	Fv: 1.5
Adjusted Spectral Response:	(Short Period) - 0.2 sec – S_{ms}: 1.64
Adjusted Spectral Response:	(One Sec) – S_{m1}: 1.37
Design Spectral Response:	(Short Period) 0.2 sec – S_{ds}: 1.09
Design Spectral Response:	(One Sec) 1.0 sec – S_{d1}: 0.91
DESIGN SPECTRAL RESPONSE – ONE SECOND:	S_{D1} = 1.31

7.5 Use of ASCE/SEI 7/22 vs ASCE 7-16:

ASCE/SEI 7-22 is not currently shown as applicable under current CBC guidelines. And in our professional opinion ASCE7-16 may be used at the designing engineer's discretion. However, based on the SEI Standards Series overview it is recommended that the ASCE 7-22 standard be immediately adopted until the CBC update is published. It is also the recommendation of the technical review

committee that the most current technical data available be used and this is supported by the Building Seismic Safety Council. In light of the fact that the ASCE/SEI 7-22 has been recommended for adoption to the International Building Code (which California Building Code follows), it is certain to be adopted by the CBC. EnGEN's policy and professional opinion is that design professionals are bound to follow the most current available technical standard which are based on lessons learned that directly impact the standard of practice.

7.6 Surface Fault Rupture:

No known active faults exist in the proposed Rice Road Pipelines Project alignment boundaries. Accordingly, the potential for fault surface rupture on the site is considered unlikely (see Figure 4).

7.7 Liquefaction Evaluation:

7.7.1 General

We were not allowed to drill boreholes in locations across the Salt Creek channel proper to evaluate the subsurface geotechnical conditions within the proposed pipeline alignment due to environmentally sensitive habitat constraints. Thus, the potential for liquefaction within the creek thus our findings are based on assumptions grounded in our knowledge of the phenomenon, supplemented by information interpreted from the borings and laboratory tests conducted during this investigation on the north and south channel embankments. It is important to acknowledge that geological soil profiles and conditions can vary significantly over short distances. Consequently, drilling boreholes along the proposed alignment in the Salt Creek Channel is essential for a thorough understanding of the geotechnical and geological conditions that will impact the planned subterranean drilling operations.

7.7.2 Professional Opinion:

Should a significant seismic event occur during construction, and if the three key conditions for liquefaction are present, namely, substantial ground shaking, high groundwater levels, and sandy soils with a mean grain size typically between 0.002 mm and 0.075 mm, liquefaction is possible. These soil properties were observed in the samples extracted for laboratory testing from the two boreholes advanced on the north and south embankments of Salt Creek. The groundwater depth varied in the boreholes advanced for this study, with a static groundwater level found at approximately 15 feet below ground surface (bgs) in Borehole 1 on the north side, and at 27 feet bgs in Borehole 2 on the south side. The condition of the soils below the groundwater level varies in density and type, indicating that liquefaction could potentially occur if a seismic event takes place during construction. However, it is not possible to predict such an event. The main concern should liquefaction occur aside from the potential safety concerns for construction workers is settlement of the supporting soils below the pipeline and/or the drilling operations themselves. A significant settlement is no considered likely however. The ability to calculate the amount of vertical settlement is not possible without samples along the alignment which we were not allowed to secure. Since we are not at liberty to estimate settlement without site specific data, these general opinions may be helpful in judging the need for additional information withing the creek proper which we highly recommend.

7.7.3 **Lateral Spread:**

Lateral spreading on river and stream beds refers to the horizontal movement of sediment, typically triggered by seismic activity or soil liquefaction. When an earthquake occurs, loose, saturated soil layers can lose their strength and behave like a liquid. This causes the ground to move horizontally, particularly in areas with gentle slopes, such as riverbanks or streambeds. As a result, soil and sediment shift towards the river or stream, leading to cracking, ground subsidence, and potential damage to nearby structures or infrastructure. Based on the subsurface soil conditions encountered during our investigation from borings advanced on the north and south embankments of the proposed pipeline alignment, the potential of lateral spread is considered unlikely due to the presence of well consolidated earth materials above the water table in these areas and the slope along the embankments exceeding 5 degrees.

7.8 Seismically Induced Landsliding and Rockfalls:

Due to the relatively low topographic relief and lack of large boulders at and within the vicinity of portion of Rice Road for which this report was prepared, the probability of seismically induced landsliding and rockfalls is considered very low to nil.

7.9 Seismically Induced Flooding, Seiches, and Tsunamis:

The site is not located near any large bodies of water and therefore the possibility of seismically induced flooding or seiches is considered very low. Due to the large distance of the project site from the Pacific Ocean, the possibility for seismically induced tsunamis is considered nil.

8.0 EARTH MATERIALS

8.1 Undocumented Fill (Af):

Artificial fills were found to be approximately 10-feet in thickness on both the northern and southern embankments of Salt Creek off of Rice Road for the proposed pipeline (see Appendix 3). It was composed of silty fine sand, dry to slightly moist, and dense in place. However, compaction testing of the undocumented fill was not within the scope of services for this investigation.

8.2 Alluvium:

8.2.1 **General:**

From an engineering perspective, the geologic descriptions of the younger and older alluvium are not differentiated. For the purposes of this report, all alluvium—whether fan or channel deposits, young or old—are classified as "Alluvium."

8.2.2 **Young Alluvium (Qal):**

Young alluvium (alluvium) was encountered beneath the fill in all borings advanced. The alluvium was found to consist of silty fine-grained sand to clean coarse to medium sands that were found to be very loose to dense in place (see Appendix 3).

8.2.3 **Old Alluvium (Qof):**

Older alluvial fan deposits (alluvium) underly the young alluvium throughout the proposed pipeline alignment. The old alluvium was found to consist of intermittent deposits of silty fine-grained sand to clean coarse to medium sands that were found to be very loose to dense in place (see Appendix 3).

8.3 Weathered Granitic Bedrock (not mapped):

Weathered granitic bedrock underlies the soil deposits along the entire trend of the proposed replacement pipeline. It was only found approximately 25-feet in depth in the southern portion of the proposed pipeline. Refusal was approximately 32.2-feet bgs. It was not found in the upper 55-feet near B-1. According to a state well (5S/2W-33C1, mapped on Plate 1) near the southwest corner of Rice Road and Olive Avenue, bedrock was found approximately 238 feet bgs. Seismic refraction data corresponds with the boring data. See Rice Road Seismic Line Locations on Plate 1 to see a cross section of the earth materials and depths likely to be encountered.

8.4 Groundwater:

Field measurements were taken from the top of the embankment along the northerly portion of the proposed Rice Road Pipelines Alignment to the approximate location of Boring-1 (B-1) and Boring-2 (B-2). Groundwater depth at B-1 for the Rice Road Pipelines Project was found to be approximately 15.4-feet bgs and 27.5-feet bgs at B-2 at the time of drilling and sampling operations. Groundwater depth within the Salt Creek proper should be anticipated to be shallower than those of the borings at the top of the Channel embankments. Without borings advanced within the channel itself it is impossible to identify accurately what the groundwater depth will be. The groundwater monitoring well constructed on the north Salt Creek embankment on level was measured on April 19, 2024, 2024 and found to be at an elevation 9-feet below existing ground surface. Near surface groundwater will be a factor in the construction operations and, as a result, a dewatering program should be designed by the contractor that will lower the groundwater table to a depth of no less than 5-feet below excavation level, otherwise it will result in base instability and flowing sides. Given the cohesionless nature of the soils within the construction zone, significant dewatering through point wells will be required.

8.4.1 **Groundwater Quality:**

A groundwater quality assessment analysis was not within the scope of services of this geotechnical investigation. Such a report would contain risk-based assessment for permitting approach by establishing three levels of risk possible for a given construction site. Risk levels are determined during the planning, design, and construction phases, and are based on project risk of generating sediments and receiving water risk of becoming impaired. Requirements apply according to the Risk Level (RL) determined, with monitoring and reporting requirements for projects. EnGEN can provide these services upon request.

8.4.2 **Groundwater Sampling:**

Water samples were secured from the groundwater monitoring well following the general guidelines for water sampling procedures from the State of California Department of Water Resources, Groundwater

Monitoring Protocols, Standards and Best Management Practices (BMP) publication (2016). The sample test results are provided in Appendix 2. A summary is provided below:

pH (mg/1)	TDS (mg/1)	Cl (mg/1)	Na (mg/1)	K (mg/1)	Ca^2 (mg/1)	Mg^2 (mg/1)
6.5	2700	545	500	12	320	98

9.0 CONCLUSIONS AND RECOMMENDATIONS

9.1 General Earthwork Recommendations:

Earthwork should be performed in accordance with the project plans, EMWD specifications, and Standard Specifications for Public Works Construction (Greenbook).

9.2 Excavation Characteristics:

Excavation of the artificial fill (man-made within north and south creek embankments) and Young Alluvium (Qal) is anticipated to be relatively easy with conventional wheel or track-mounted excavators. Based on borings advanced for this investigation, a weathered granitic bedrock unit may be encountered in excavations greater than 25-feet in depth in the southern portion of the proposed pipeline (see Plate 1). Weathered granitic bedrock was encountered at approximately 25-feet. Refusal of drilling operations was encountered in B-2 at a depth of 32.2-feet bgs. Seismic Refraction data reflects relatively similar depths for weathered granitic bedrock. Difficult to very difficult excavating should be anticipated for any operations below 30-feet bgs in the southern section of the proposed pipeline near B-2.

9.3 General Trench Safety Recommendations:

Excavations should conform to OSHA and EMWD safety requirements. It is recommended that trenches excavated to depths of 5.0-feet or deeper be cut back to an inclination not steeper than 1:1 (horizontal to vertical) or be adequately shored during construction. Some lenses of sandy and/or gravelly soil may be encountered which will require flatter inclinations. The contractor should be responsible for on-site safety per applicable standards.

9.4 Trench Bottom:

The subgrade for the pipe should be firm and unyielding prior to placement of the bedding material and pipe. Any loose or disturbed soils should be removed and properly recompacted. Cobbles or boulders (if any) should be removed from the trench bottom and replaced with properly compacted fill. If saturated soils are encountered in the trench bottom, they should be removed and replaced with properly compacted fill, or clean crushed rock not to exceed ¾-inch diameter.

9.5 Pipe Bedding:

Pipes should be bedded in a granular material that has a Sand Equivalent (SE) of 30 or greater. The bedding material should be densified through either mechanical methods (mechanical compaction) or through water densification (jetting).

9.6 Engineered Backfill:

The on-site soils are considered suitable for trench backfill material. All fill material, whether on-site material or import, should be accepted by the Project Geotechnical Engineer and/or his representative before placement. All fills should be free from vegetation, organic material, and man-made debris. Additionally, rocks larger than 6-inches in diameter should be avoided for use in the backfill. Import fill should be no more expansive than the existing on-site material, unless approved by the Project Geotechnical Engineer. Approved fill material should be placed in horizontal lifts not exceeding 6.0 to 8.0-inches in thickness and watered or aerated to obtain near-optimum moisture content (within 2.0 percent of optimum). Each lift should be spread evenly and should be thoroughly mixed to ensure uniformity of soil moisture. Structural fill should meet a minimum relative compaction of 90 percent of maximum dry density based upon ASTM D 1557 procedures. Moisture content of fill materials should not vary more than 2.0 percent of optimum, unless approved by the Project Geotechnical Engineer.

9.7 Soil Expansion Potential:

Preliminary Expansion Index testing was performed, yielding EI value ranging from 0-1. This is classified as a **very low expansion** potential. Import or near surface soils may have a different EI.

9.8 Soil Corrosive Potential:

There are many factors that can affect corrosion potential of soil including soil moisture content, pH, resistivity, permeability chloride and sulfate concentrations. Should the design of the proposed pipeline require special considerations related to soil corrosion, a licensed corrosion engineer should be contacted to review this report to determine if the findings provided are sufficient for the intended purposes.

The following table lists the corrosive tests performed and their results:

Soil Corrosion Parameter Test Results*					
Sample Number	**Location and Depth**	**pH**	**Minimum Resistivity (ohm-cm)**	**Chloride (ppm)**	**Sulfate (ppm)**
A-1	B-1 @ 0'-5'	7.38	2,844	250	90
A-2	B-2 @ 0'-5'	7.20	1,103	250-499	200

***California Test Methods 643, 417, and 422**

CALTRANS considers soils that will be in contact with concrete elements to have corrosive properties if one or more of the following conditions exist:

- The pH is equal to or less than 5.5
- The resistivity is equal to or less than 1,000 ohm-cm
- Chloride concentration is equal to or greater than 500 parts per million (ppm)
- Sulfate concentration is equal to or greater than 2,000 ppm.

Samples tested that may be in contact with concrete, do not possess corrosive qualities.

10.0 SOIL BEARING AND EARTH PRESSURES:

10.1 Bearing Capacity:

Provided the recommendations for site earthwork presented herein are incorporated into the project design and construction, the allowable bearing value for the total dead plus frequently applied live loads

is 1,500 psf in competent engineered fill or dense native soils. The allowable bearing value has a Factor of Safety of at least 3.0 and may be increased by 33.3 percent for short durations of live and/or dynamic loading such as seismic forces.

10.2 Lateral Earth Pressures:

Additional design parameters for resistance to static lateral forces for thrust blocks and other appurtenances are as follows:

Allowable Lateral Pressure (Equivalent Fluid Pressure), Passive Case:
Engineered Fill – 200 pcf
Undisturbed Alluvium or Fan Deposits - 150 pcf
Bedrock - 300 pcf
Allowable Coefficient of Friction:
Soil/rock to concrete - 0.35

Lateral load resistance may be developed by a combination of friction acting on the base of thrust blocks and passive earth pressure developed on the sides of the thrust blocks when in contact with engineered fill or competent native earth material. The above values are allowable design values and may be used in combination without reduction in evaluating the resistance to lateral loads. The allowable values may be increased by 33.3 percent for short durations of live and/or dynamic loading, such as seismic forces. For the calculation of passive earth resistance, the upper 1.0-foot of material should be neglected. The maximum recommended allowable passive pressure is 5.0 times the recommended design value.

10.3 Soil Parameters

The following soil parameters may be used for pipe in direct contact with soil:

Soil Parameter	Value
Soil unit weight (moist)	125 pcf
Soil internal angle of friction	38 degrees
Soil cohesion	250 pcf
Sliding friction, soil to pipe	0.15

The blows per foot in order to drive a California-Modified (Cal-Mod) split spoon sampler during drilling and sampling operations are shown on the exploratory boring logs. A correction factor of 60 percent may be applied to the blows per foot in order to convert them to SPT (Standard Penetration Test) blows per foot. Based on the US Department of the Interior Bureau of Reclamation Method for Prediction of Flexible Pipe Deformation (February 2019) Table 8, and the SPT blow counts, a modulus of soil reaction for the trench wall (**E'n**) of 400 pounds per square inch may be used for soils. Where crystalline bedrock (granitic bedrock or phyllite) is exposed in the trench wall a reaction of 4,000 pounds per square inch may be used, based on the Bureau of Reclamation (2019) method, Table 6. The modulus of soil reaction for the embedment (shading) material (**E'b**) should be based upon imported granular soils such as clean sand (SP, with a Sand Equivalency equal to or greater than 30) that is densified or based upon clean gravel (GP) that is self-compacting.

10.4 Soil Load on Flexible Pipe

Both dead and live loads should be considered in the design of the pipe. The dead load acting on the pipe can be calculated per unit length using soil parameters of the backfill soils as well as the trench geometry, and pipe size, among many factors. Live loads such as traffic and seismic loads should also be considered. The dead load per unit length of pipe can be calculated as a prism utilizing the US Department of the Interior Bureau of Reclamation Method for Prediction of Flexible Pipe Deformation (February 2019) Equation C.1:

$$W_E = yhD$$

Where:

W_E = prism earth load per foot of pipe length
y = unit weight of soil above the pipe (pounds per cubic foot)
h = cover over pipe (feet)
D = Diameter of the pipe (feet)

11.0 MICROTUNNELING

11.1 General:

It is represented that microtunneling operations is the chosen method to accomplish extending the Rice Road pipeline across Salt Creek. This construction method is deemed feasible from a geotechnical perspective within the alluvial soils encountered and depending on the depth of the microtunneling operations, weathered bedrock can be anticipated at depths greater than 25 feet below existing ground surface on the southerly Salt Creek embankment.

11.2 Groundwater:

Groundwater is anticipated at these locations. Thus, it is recommended that contractor should 1) review the geotechnical report to confirm that the selected area for excavation technique is feasible, and 2) perform additional studies as deemed necessary to evaluate such technique and the effect of groundwater seepage if saturated conditions are present at the time of construction.

11.3 Dewatering:

Dewatering system design and estimated seepage/discharge are not within the scope of this investigation and considered the sole responsibility of the contractor at this writing. Dewatering system plans and procedures should be prepared by the contractor's engineer or specialty dewatering contractor and reviewed by the district engineer(s) prior to implementation. Dewatering operations should lower the groundwater table to a depth of no less than 5-feet below excavation level, otherwise it will result in base instability and possible flowing sides. Given the cohesionless nature of the soils within the construction zone, significant dewatering through point wells will be required. Dewatering plans and procedures should include anticipated dewatering well locations, anticipated drawdown and drawdown monitoring, volume of pumping, potential for settlement, and groundwater discharge. Dewatering rates will vary significantly based on exposed conditions at the specific site, as well as size and depth of excavations. For any surface discharge, disposal of groundwater should be performed in accordance with the California Regional Water Quality Control Board (RWQCB) requirements. Any

discharge plan will likely require a National Pollutant Discharge Elimination System (NPDES) permit, which is expected to be obtained by the contractor.

11.4 Anticipated Soil Conditions at Potential Microtunneling Site Locations

As discussed under § 7.0 of this report, the anticipated soils conditions to be encountered at potential microtunneling locations will consist of silty fine to medium sands (SM) and coarse to medium sands (SP). Based on the field and laboratory testing results, general engineering characteristics of these alluvial soils are as follows:

- Alluvium is loose to medium dense with N value ranging from 4 to ± 30 blows per foot.
- Cohesionless alluvium is expected to possess "fast raveling" behavior in tunnel excavations when saturated soil conditions are present.
- Unless groundwater levels are maintained below the bottom of the microtunneling shaft(s by dewatering operations, alluvium in and below the bottom of the shaft(s) will heave and potentially lead to instability of the shaft excavation.

11.5 Anticipated Bedrock Conditions within the Microtunneling Alignment:

Granitic bedrock was encountered in boring No. B2 advanced on the southerly embankment of unimproved Rice Road south of Salt Creek at a depth of approximately 25-feet below ground surface in boring number 2 (elevation: 1466.2 amsl) with refusal encountered at a depth of approximately 32.2 feet (see Appendix 3). Boring No. 1 was advanced on the north embankment of Salt Creek (elevation 1463.5). No bedrock was encountered to the maximum depth explored (approximately 55.5-feet below ground surface). Based on the seismic refraction survey conducted for this investigation, seismic line S1 indicate seismic velocity above 4,000 fps at a depth of approximately 30-feet from surface elevation. Depending on the excavation equipment used, once velocity returns exceed 4,000 feet per second, standard excavation equipment will reach refusal. As such, excavations depths greater than 30 feet from surface elevation will likely experience difficulty.

12.0 PAVEMENT RECOMMENDATIONS

12.1 Pavement Design

It is recommended that replacement of the structural pavement section for the improved sections of Rice Road match the existing of 4-inches of Asphalt over 4-inches of Class II aggregate base. However, this recommendation is presented for preliminary design purposes only. The final design should be based on County Traffic Index and R-Values testing performed at subgrade upon completion of pipeline or as directed by the Riverside County Department of Transportation.

13.0 MISCELLANEOUS RECOMMENDATIONS

13.1 Supplemental Construction Observations and Testing:

Any subsequent grading for development of the subject property should be performed under engineering observation and testing performed by EnGEN Corporation. Subsequent grading includes, but is not limited to, any additional over-excavation, fill placement, and excavation of temporary slopes.

Observations should be made prior to installation of the pipes to verify and/or modify, if necessary, the conclusions and recommendations in this report. Observations of over-excavation, fill placement, and trench backfill, pavement subgrade and base course, or other earthwork completed for the development of the project should be performed by EnGEN Corporation. If any of the observations and testing to verify site geotechnical conditions are not performed by EnGEN Corporation, liability for the safety and performance of the development is limited to the actual portions of the project observed and/or tested by EnGEN Corporation.

14.0 PLAN REVIEW

Subsequent to formulation of final plans and specifications for the project but before bids for construction are requested, plans for the proposed pipeline should be reviewed by EnGEN Corporation to verify compatibility with site geotechnical conditions and conformance with the recommendations contained in this report. If EnGEN Corporation is not accorded the opportunity to make the recommended review, we will assume no responsibility for misinterpretation of the recommendations presented in this report.

15.0 CONFERENCES

15.1 Pre-Bid Conference:

It is recommended that a pre-bid conference be held with the owner or an authorized representative, the Project Architect, the Project Civil Engineer, the Project Geotechnical Engineer and the proposed contractors present. This conference will provide continuity in the bidding process and clarify questions relative to the supplemental grading and construction requirements of the project.

15.2 Pre-Excavation Conference:

Before the start of any excavation, a conference should be held with the owner or an authorized representative, the contractor, the Project Architect, the Project Civil Engineer, and the Project Geotechnical Engineer present. The purpose of this meeting should be to clarify questions relating to the intent of the geotechnical recommendations and to verify that the project specifications comply with the recommendations of this geotechnical engineering report. Any special excavation procedures and/or difficulties proposed by the contractor can also be discussed at that time.

16.0 CLOSURE

This report has been prepared for use by the parties or project named or described in this document. It may or may not contain sufficient information for other parties or purposes. In the event that changes in the assumed nature, design, or location of the proposed structure and/or project as described in this report, are planned, the conclusions and recommendations contained in this report will not be considered valid unless the changes are reviewed, and the conclusions and recommendations of this report are modified or verified in writing. This study was conducted in general accordance with the applicable standards of our profession and the accepted soil and foundation engineering principles and practices at the time this report was prepared. No other warranty, implied or expressed beyond the representations of this report, is made. Although every effort has been made to obtain information regarding the geotechnical and subsurface conditions of the site, limitations exist with respect to the knowledge of unknown regional or localized off-site conditions that may have an impact at the site. The recommendations presented in this report are valid as of the date of the report. However, changes in

the conditions of a property can occur with the passage of time, whether they are due to natural processes or to the works of man on this and/or adjacent properties. If conditions are observed or information becomes available during the design and construction process that are not reflected in this report, EnGEN Corporation should be notified so that supplemental evaluations can be performed, and the conclusions and recommendations presented in this report can be modified or verified in writing. Changes in applicable or appropriate standards of care or practice occur, whether they result from legislation or the broadening of knowledge and experience. Accordingly, the conclusions and recommendations presented in this report may be invalidated, wholly or in part, by changes outside of the control of EnGEN Corporation which occur in the future.

Thank you for the opportunity to provide our services. Often, because of design and construction details which occur on a project, questions arise concerning the geotechnical conditions on the site. If we can be of further service or should you have questions regarding this report, please do not hesitate to contact this office at your convenience. Because of our involvement in the project to date, we would be pleased to discuss engineering testing and observation services that may be applicable on the project.

Respectfully submitted,
EnGEN Corporation

Wayne Baimbridge, Principal
REPA 467279

REGISTERED PROFESSIONAL ENVIRONMENTAL PROPERTY ASSESSOR
WAYNE BAIMBRIDGE
No. 467279

Osbjorn Bratene, Principal
GE 162

REGISTERED PROFESSIONAL ENGINEER
OSBJORN BRATENE
No. 162
GEOTECHNICAL
STATE OF CALIFORNIA

Appendix 1 - General Technical References

1. **California Building Code (CBC)**, 2022, State of California, California Code of Regulations, Title 24, California Building Code.

2. **California Division of Mines and Geology (CDMG)**, 1997, Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117.

3. **California Geological Survey (CGS)**, 2002, California Geomorphic Provinces: CDMG, Note 36.

4. **California Geological Survey (CGS)**, 2014, Guidelines for Evaluating and Mitigating Seismic Hazards in California, 2008, Special Publication 117A.

5. **California Geological Survey (CGS),** 2021, Earthquake Zones of Required Investigation web application viewed at https://maps.conservation.ca.gov/cgs/EQZApp.

6. **Hart, Earl W., and Bryant, William A**., Revised 2007, Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps: State of California, Department of Conservation, Division of Mines and Geology, Special Publication 42.

7. **Kennedy, M.P**., 1977, Recency and Character of Faulting Along the Elsinore Fault Zone in Southern Riverside County, California: California Division of Mines and Geology, Special Report 131, 12 p., 1 Plate, Scale 1:24,000.

8. **Mann, J.F., Jr**., October 1955, Geology of a Portion of the Elsinore Fault Zone, California: State of California, Department of Natural Resources, Division of Mines, Special Report 43.

9. **Morton, and Matti, 2003-2004, (Sharp, 1967)**, Geologic Map of the Hemet 7.5 Quadrangle, California, Scale 1:24,000, USGS Open File Report 04-1445.

10. **Riverside County Transportation and Land Management Agency**, 2000, Technical Guidelines for Review of Geotechnical and Geologic Reports.

11. **Riverside County Planning Department**, January 1983, Riverside County Comprehensive General Plan - County Seismic Hazards Map, Scale 1 Inch = 2 Miles.

12. **Riverside County Geographic Information System,** 2022, Map My County web application, version 10, viewed at https://gis.countyofriverside.us.

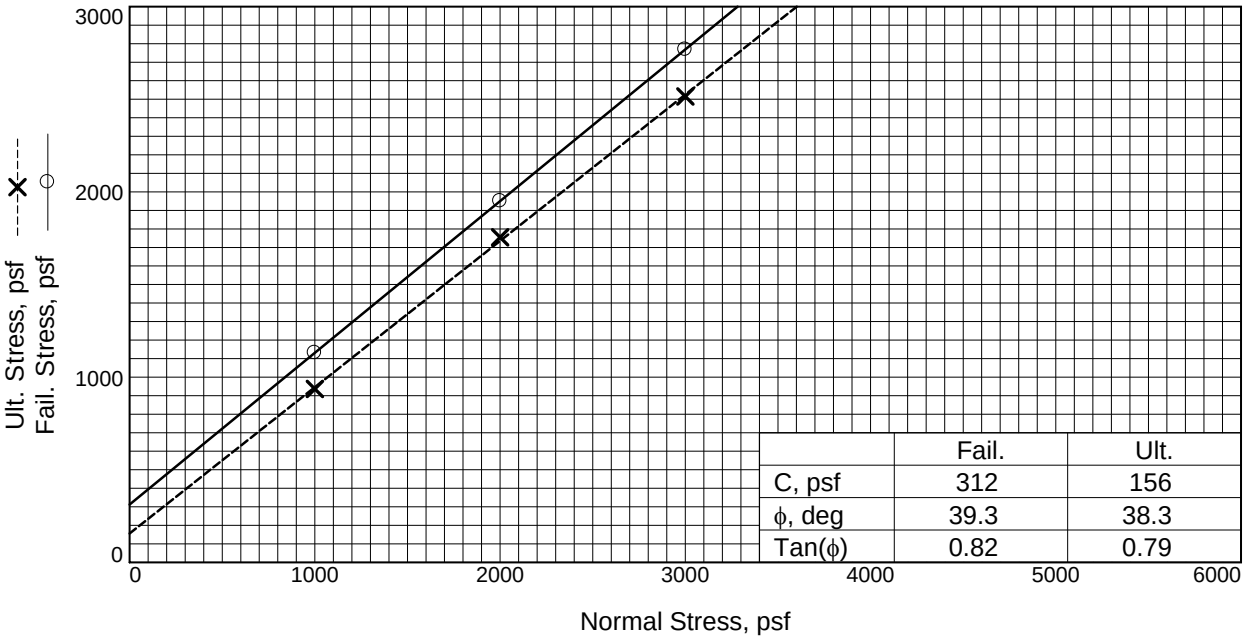
13. **Southern California Earthquake Data Center (SCEDC),** 2022, Southern California Earthquake Data Center Website, http://www.scecdc.scec.org.

14. **Structural Engineers Association of California (SEAOC),** 2022, Seismic Design Mapping Tool, web application viewed at: www.seaoc.org/page/seismicdesignmaptool

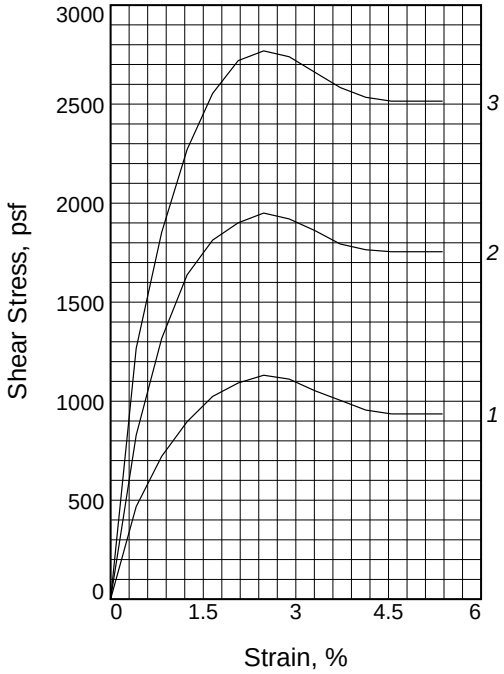
15. **US Department of the Interior Bureau of Reclamation,** 2019, Method for Prediction of Flexible Pipe Deflection, M-25 Third Edition, February 2019.

16. **National Highway Institute (2009)** Bridge, Scour and Stream Instability Countermeasures: Experience Selection and Design Guidance-Third Edition, Volume 1.

Appendix 2 - Laboratory Test Results



	Fail.	Ult.
C, psf	312	156
ϕ, deg	39.3	38.3
Tan(ϕ)	0.82	0.79



Sample No.		1	2	3
Initial	Water Content, %	9.4	9.4	9.4
	Dry Density, pcf	123.7	123.7	123.7
	Saturation, %	72.5	72.5	72.5
	Void Ratio	0.3480	0.3480	0.3480
	Diameter, in.	2.42	2.42	2.42
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	12.9	12.8	12.6
	Dry Density, pcf	123.7	123.7	123.7
	Saturation, %	99.2	98.0	96.8
	Void Ratio	0.3480	0.3480	0.3480
	Diameter, in.	2.42	2.42	2.42
	Height, in.	1.00	1.00	1.00
Normal Stress, psf		1000	2000	3000
Fail. Stress, psf		1131	1950	2769
Strain, %		2.5	2.5	2.5
Ult. Stress, psf		936	1755	2515
Strain, %		4.5	4.5	4.5
Strain rate, in./min.		0.100	0.100	0.100

Sample Type: Remold
Description: Silty Fine Sand, Yellowish Brown

Specific Gravity= 2.67
Remarks:
Bulk Sample A-1
B-1 @ 0'-5'
Sampled by MT/JTP
Figure _____

Client: EMWD

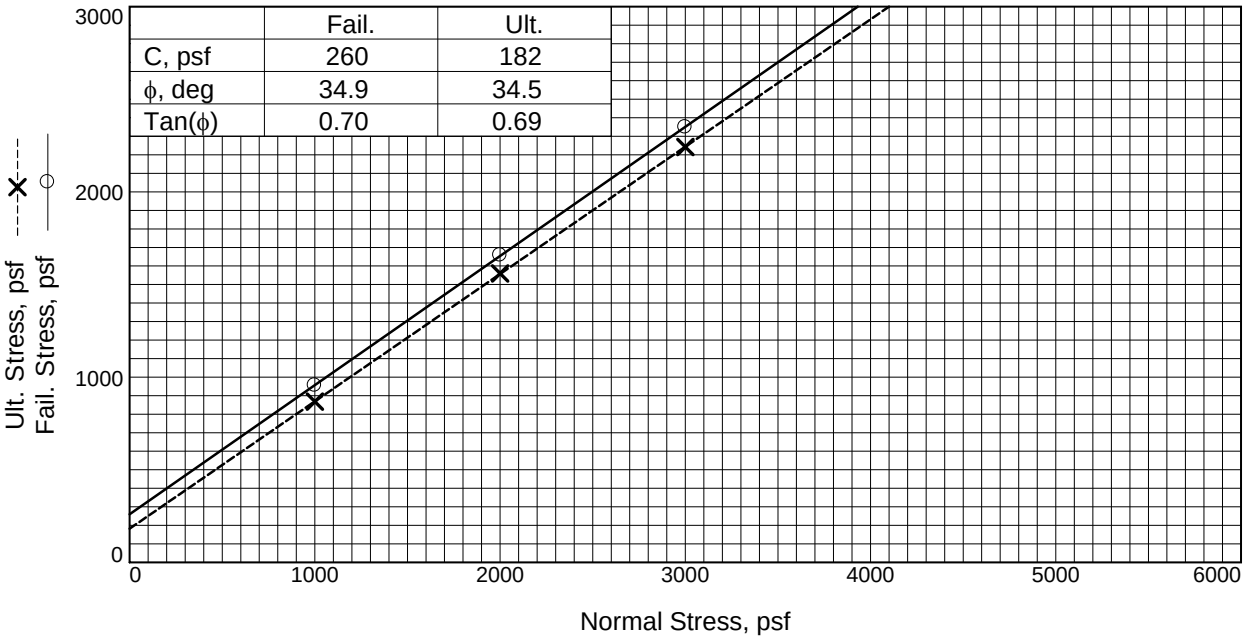
Project: Rice Road Pipeline

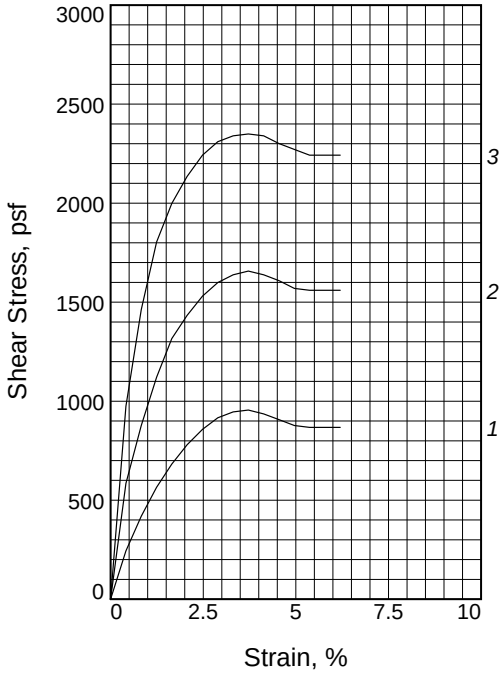
Location: B-1 @ 0'-5'
Sample Number: A-1 **Depth:** 0'-5'
Proj. No.: 4891GS **Date Sampled:** 9/28/22

DIRECT SHEAR TEST REPORT

EnGEN Corporation

Tested By: BC





Sample No.		1	2	3
Initial	Water Content, %	9.2	9.2	9.2
	Dry Density, pcf	123.6	123.6	123.6
	Saturation, %	74.8	74.8	74.8
	Void Ratio	0.3233	0.3233	0.3233
	Diameter, in.	2.42	2.42	2.42
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	12.3	12.1	12.0
	Dry Density, pcf	123.6	123.6	123.6
	Saturation, %	99.3	98.1	96.8
	Void Ratio	0.3233	0.3233	0.3233
	Diameter, in.	2.42	2.42	2.42
	Height, in.	1.00	1.00	1.00
Normal Stress, psf		1000	2000	3000
Fail. Stress, psf		955	1657	2350
Strain, %		3.7	3.7	3.7
Ult. Stress, psf		868	1560	2242
Strain, %		5.4	5.4	5.4
Strain rate, in./min.		0.100	0.100	0.100

Sample Type: Remold
Description: Silty Fine Sand, Dark Yellowish Brown

Specific Gravity= 2.62
Remarks:
Bulk Sample A-2
B-2 @ 0'-5'
Sampled by MT/JTP
Figure _____

Client: EMWD

Project: Rice Road Pipeline

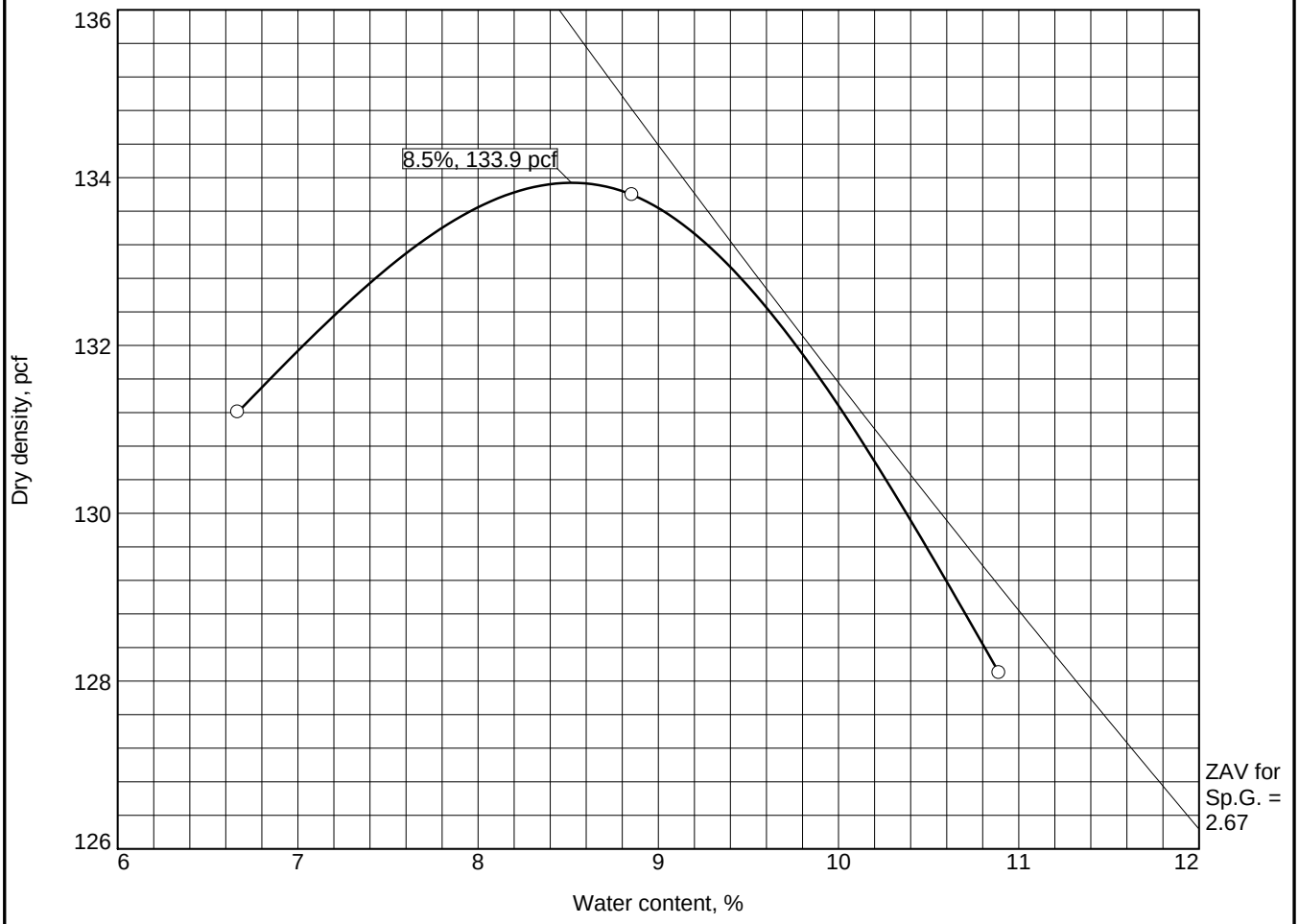
Location: B-2 @ 0'-5'
Sample Number: A-2 **Depth:** 0'-5'
Proj. No.: 4891GS **Date Sampled:** 9/28/22

DIRECT SHEAR TEST REPORT

EnGEN Corporation

Tested By: BC

MAXIMUM DENSITY - OPTIMUM MOISTURE REPORT



Test specification: ASTM D 1557-07 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
0'-5'	SM		3.6%					

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 133.9 pcf Optimum moisture = 8.5 %	Silty Fine Sand, Yellowish Brown

Project No. 4891GS **Client:** EMWD
Project: Rice Road Pipeline

○**Location:** B-1 @ 0'-5' **Sample Number:** A-1

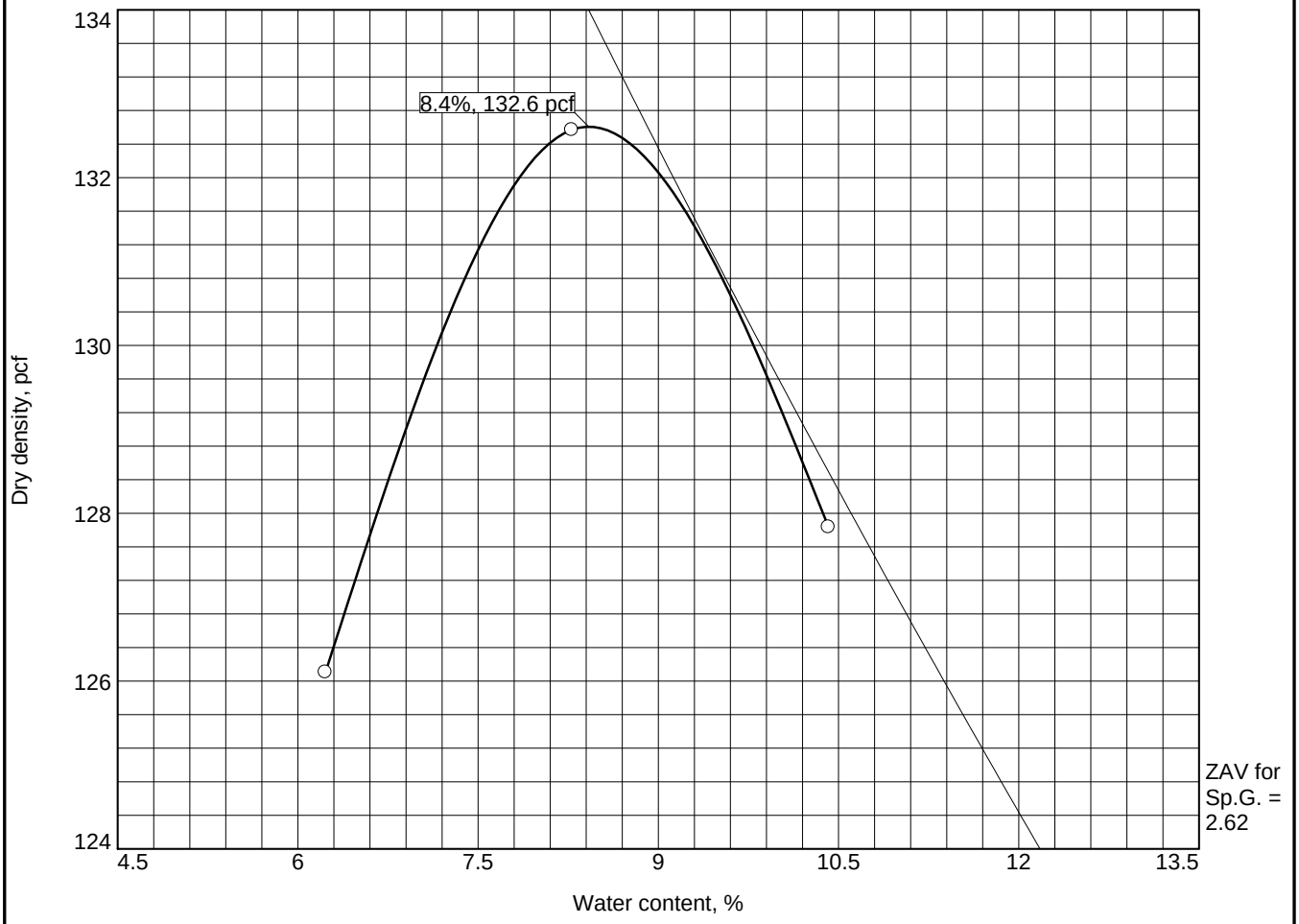
Remarks:
Bulk Sample A-1
B-1 @ 0'-5'
Sampled by MT/JTP on 9/28/2

EnGEN Corporation

Figure

Tested By: BC

MAXIMUM DENSITY - OPTIMUM MOISTURE REPORT



Test specification: ASTM D 1557-07 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
0'-5'	SM		6.2%					

TEST RESULTS

Maximum dry density = 132.6 pcf

Optimum moisture = 8.4 %

MATERIAL DESCRIPTION

Silty Fine Sand, Dark Yellowish Brown

Project No. 4891GS **Client:** EMWD

Project: Rice Road Pipeline

○**Location:** B-2 @ 0'-5' **Sample Number:** A-2

Remarks:

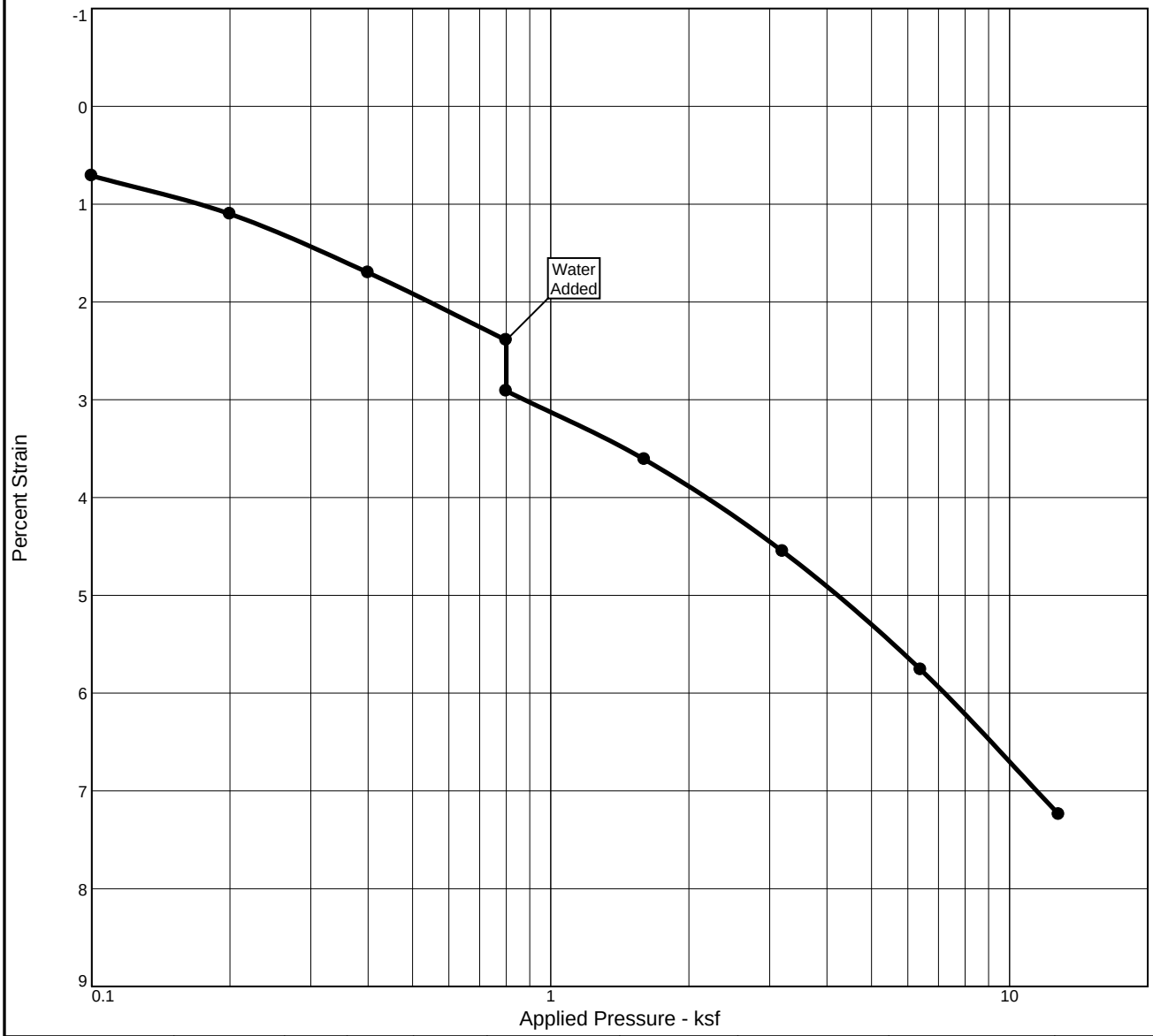
Bulk Sample A-2
B-2 @ 0'-5'
Sampled by MT/JTP on 9/28/22

EnGEN Corporation

Figure

Tested By: BC

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	e_o	Swell Press. (ksf)	Clpse. %	C_r
Sat.	Moist.									
73.9 %	12.5 %	112.8			2.60		0.439		0.5	

MATERIAL DESCRIPTION	USCS	AASHTO
Silty Fine Sand with Some Gravel, Yellowish Brown (10YR 5/8)	SM	

Project No. 4891GS **Client:** EMWD

Project: Rice Road Pipeline

Source of Sample: B-1 **Depth:** 15' **Sample Number:** B-1 @ 15'

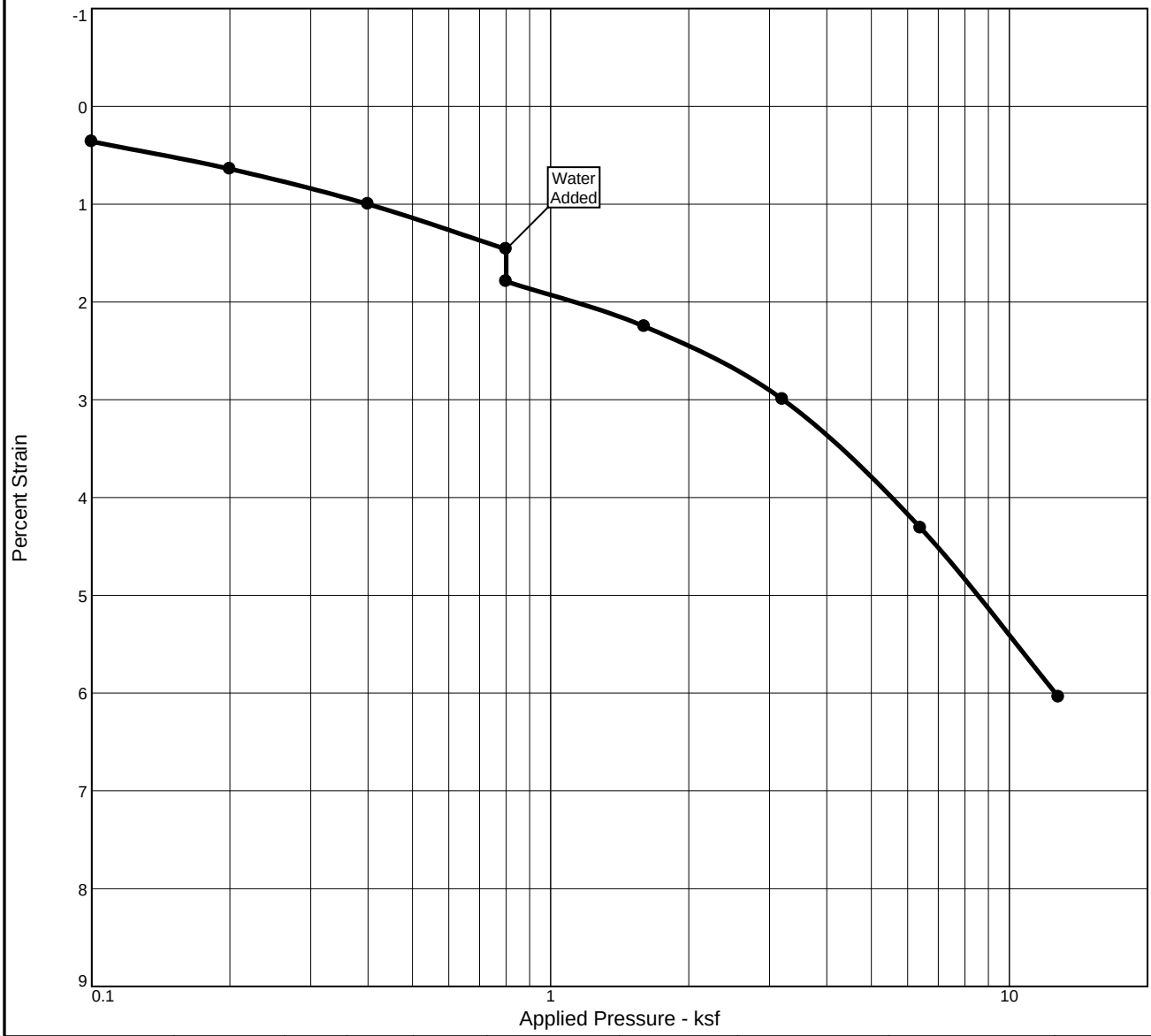
Remarks:
Young Alluvium (Qal)

EnGEN Corporation

Figure

Tested By: MT

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	e_o	Swell Press. (ksf)	Clpse. %	C_r
Sat.	Moist.									
99.4 %	14.0 %	118.9			2.60		0.365		0.3	

MATERIAL DESCRIPTION	USCS	AASHTO
Silty Fine to Medium Sand, Yellowish Brown (10YR 5/8)	SM	

Project No. 4891GS **Client:** EMWD

Project: Rice Road Pipeline

Source of Sample: B-1 **Depth:** 35' **Sample Number:** B-1 @ 35'

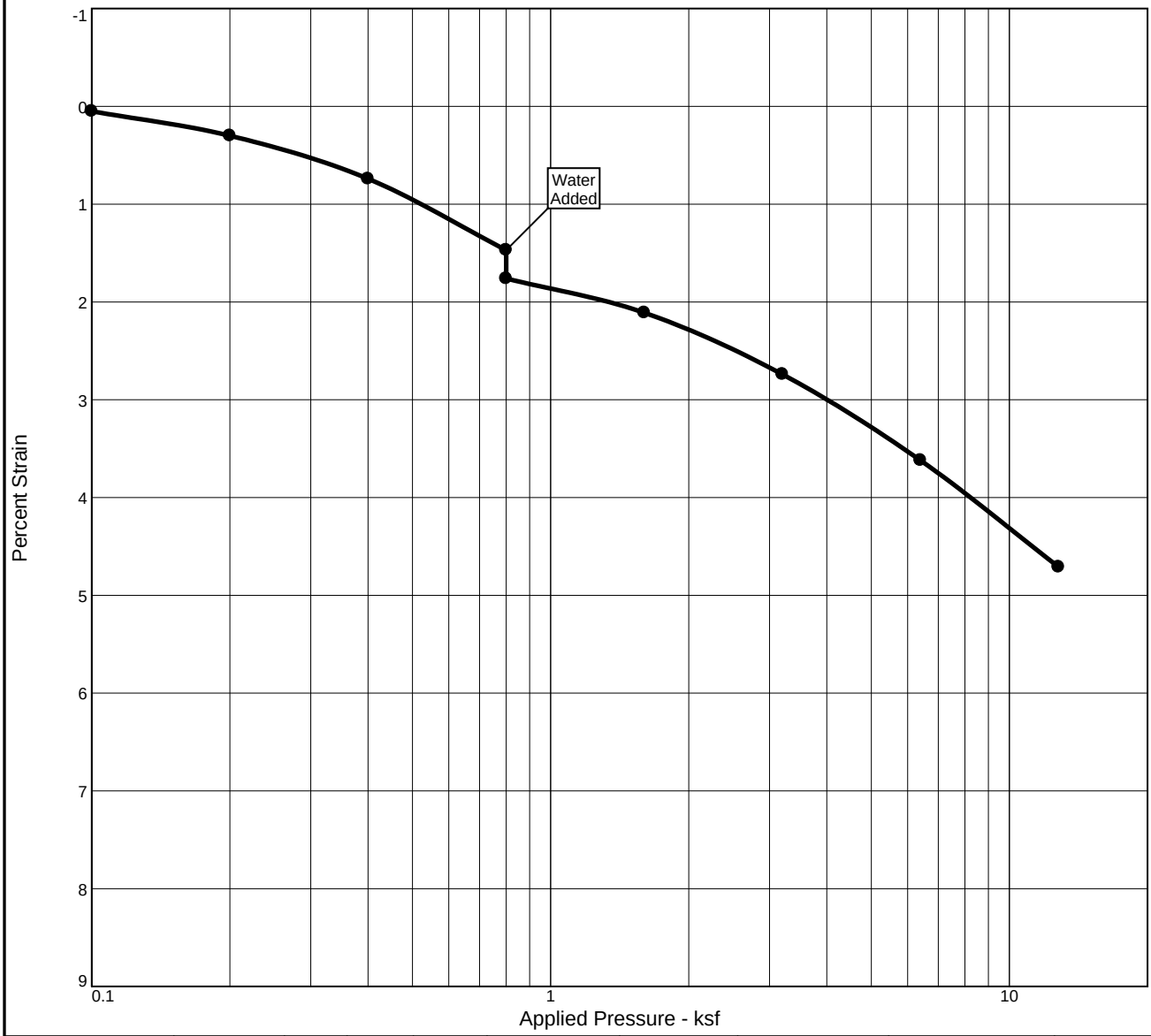
Remarks:
Young Alluvium (Qal)

EnGEN Corporation

Figure

Tested By: MT

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	e_o	Swell Press. (ksf)	Clpse. %	C_r
Sat.	Moist.									
35.0 %	8.0 %	102.0			2.60		0.591		0.3	

MATERIAL DESCRIPTION	USCS	AASHTO
Silty Fine Sand, Dark Yellowish Brown (10YR 4/4)	SM	

Project No. 4891GS **Client:** EMWD

Project: Rice Road Pipeline

Source of Sample: B-2 **Depth:** 2.5' **Sample Number:** B-2 @ 2.5'

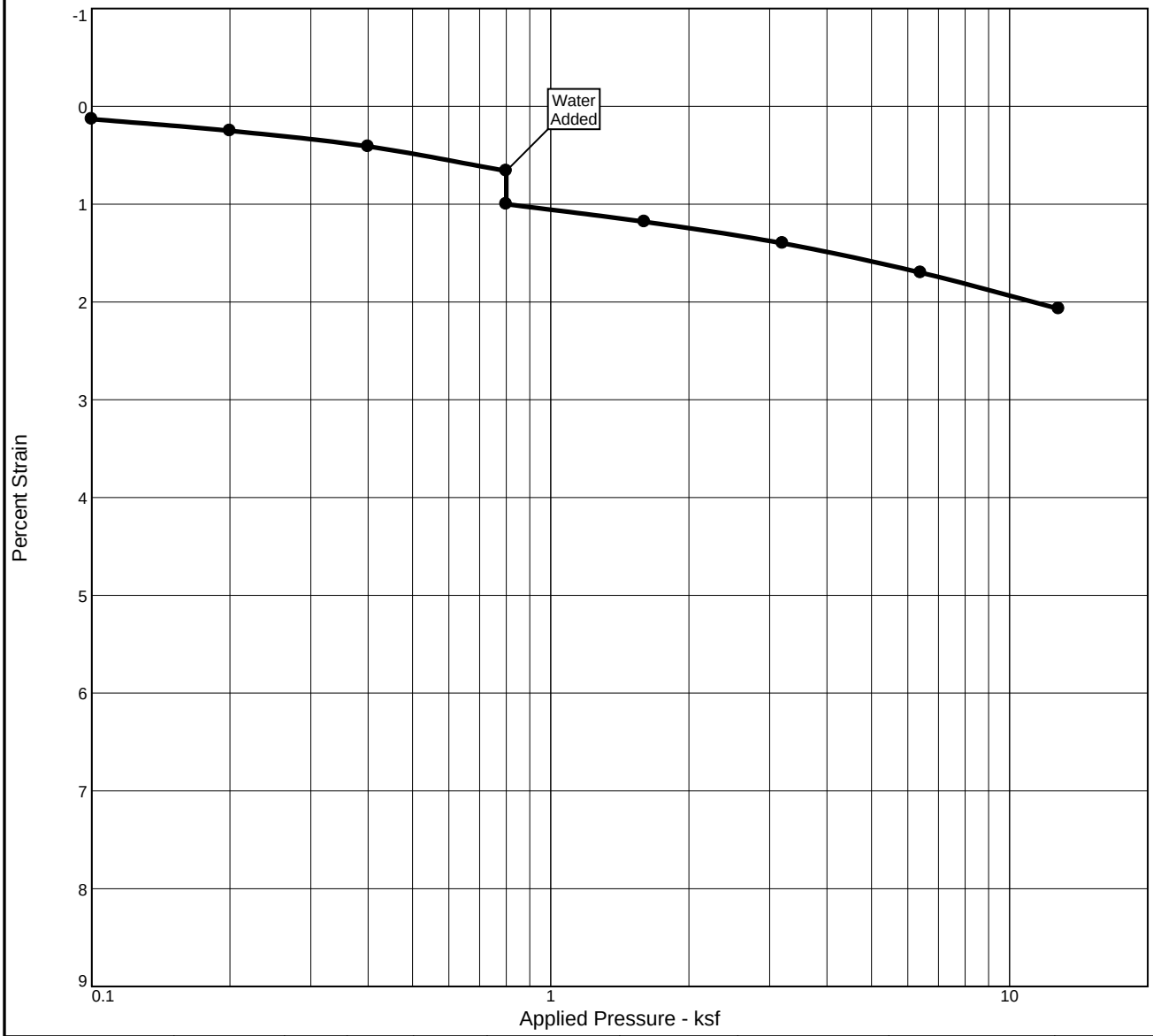
Remarks:
Undocumented Fill (Afu)

EnGEN Corporation

Figure

Tested By: MT

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	e_o	Swell Press. (ksf)	Clpse. %	C_r
Sat.	Moist.									
84.5 %	13.7 %	114.1			2.60		0.422		0.3	

MATERIAL DESCRIPTION	USCS	AASHTO
Silty Fine to Medium Sand, Brown (10YR 4/3)	SM	

Project No. 4891GS **Client:** EMWD

Project: Rice Road Pipeline

Source of Sample: B-2 **Depth:** 15' **Sample Number:** B-2 @ 15'

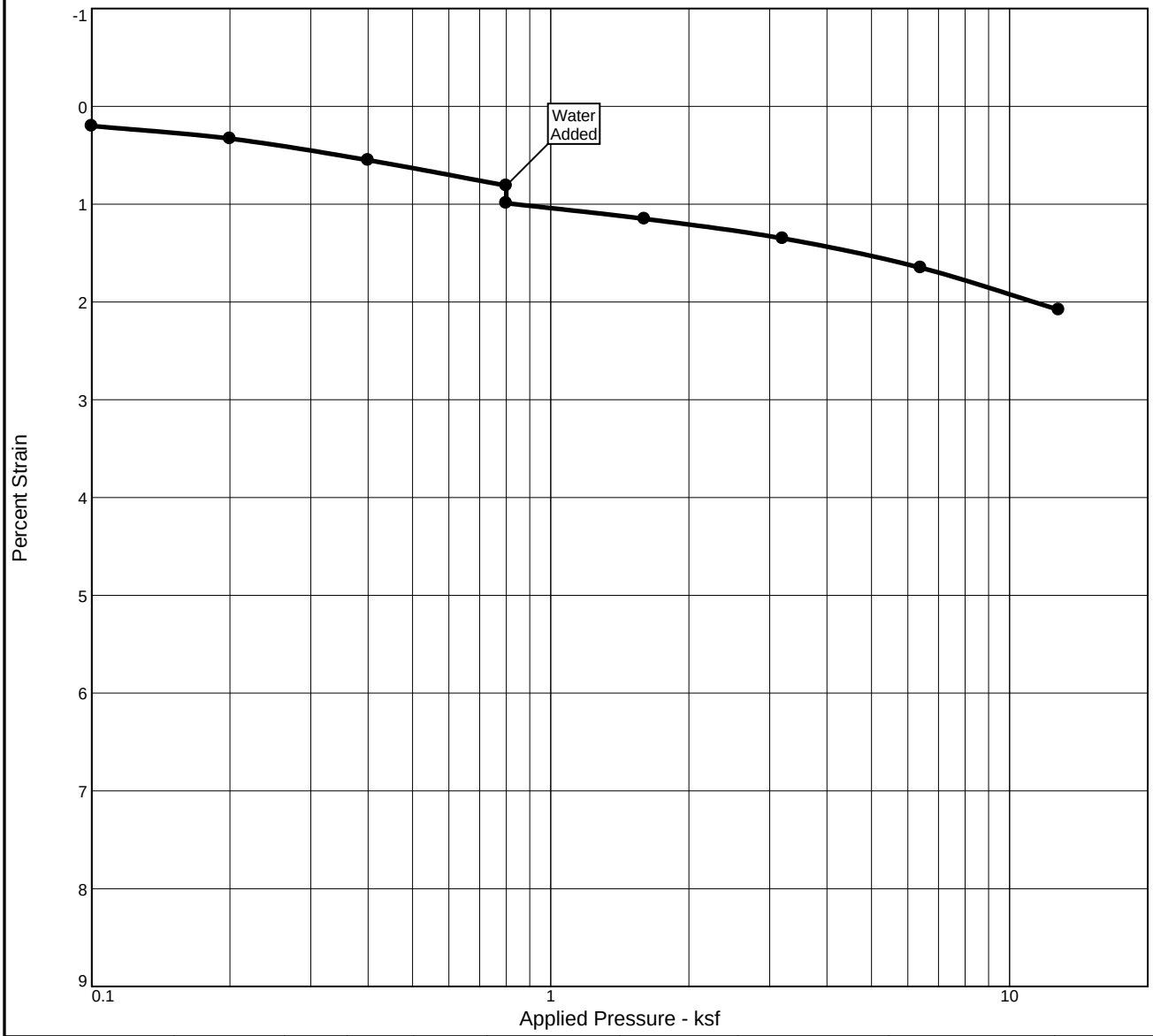
Remarks:
Young Alluvium (Qal)

EnGEN Corporation

Figure

Tested By: MT

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	e_o	Swell Press. (ksf)	Clpse. %	C_r
Sat.	Moist.									
80.2 %	10.7 %	120.7			2.60		0.345		0.2	

MATERIAL DESCRIPTION	USCS	AASHTO
Coarse to Medium sand w/ Trace Very Fine Sand, Grayish Brown (10YR 5/2)	SM	

Project No. 4891GS **Client:** EMWD

Project: Rice Road Pipeline

Source of Sample: B-2 **Depth:** 25' **Sample Number:** B-2 @ 25'

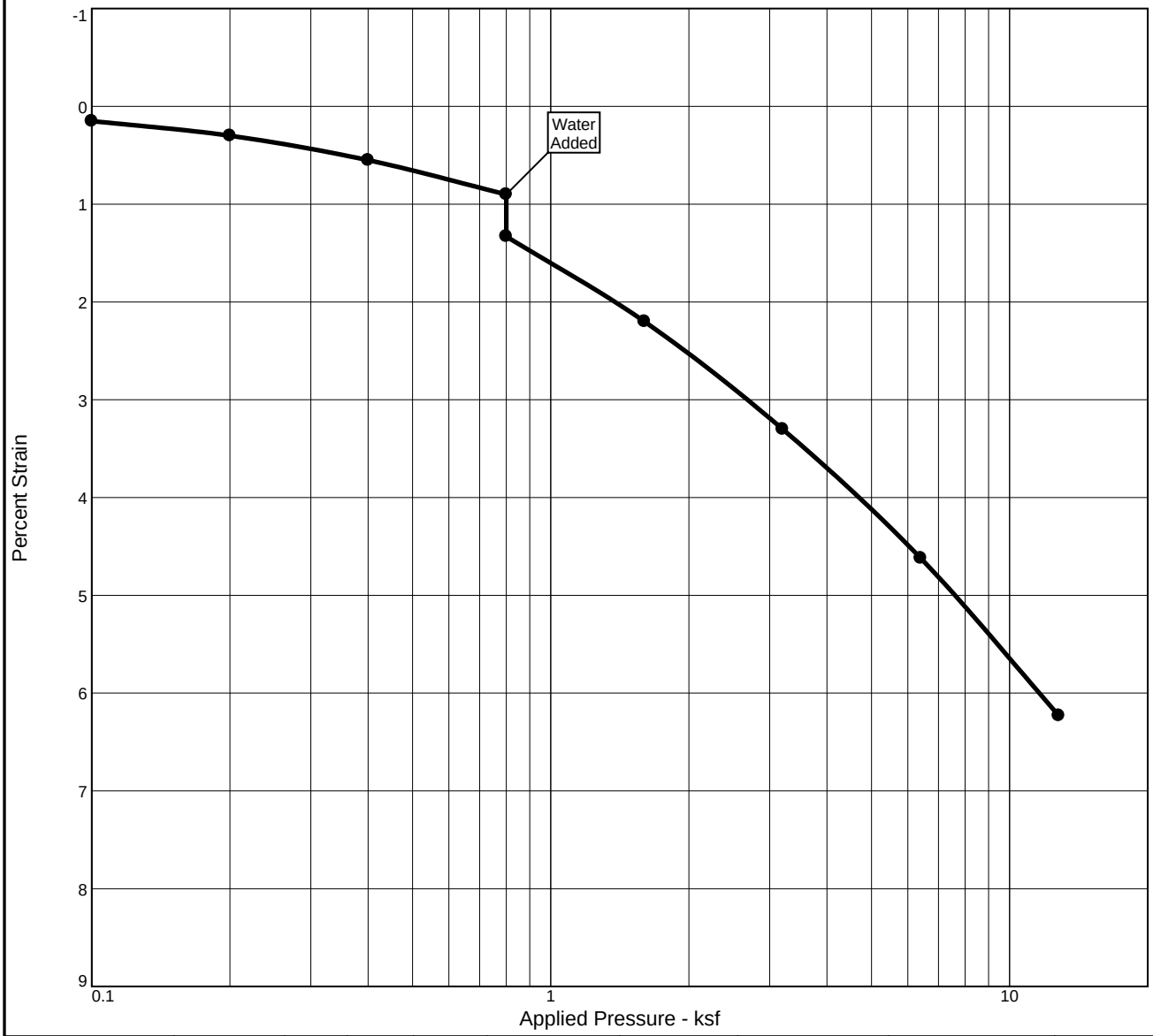
Remarks:
Weathered Granitics

EnGEN Corporation

Figure

Tested By: MT

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	e_o	Swell Press. (ksf)	Clpse. %	C_r
Sat.	Moist.									
62.0 %	7.9 %	121.8			2.60		0.333		0.4	

MATERIAL DESCRIPTION	USCS	AASHTO
Silty Fine Sand, Dark Yellowish Brown (10YR 4/4)	SM	

Project No. 4891GS **Client:** EMWD

Project: Rice Road Pipeline

Source of Sample: B-2 **Depth:** 5' **Sample Number:** B-2 @ 5'

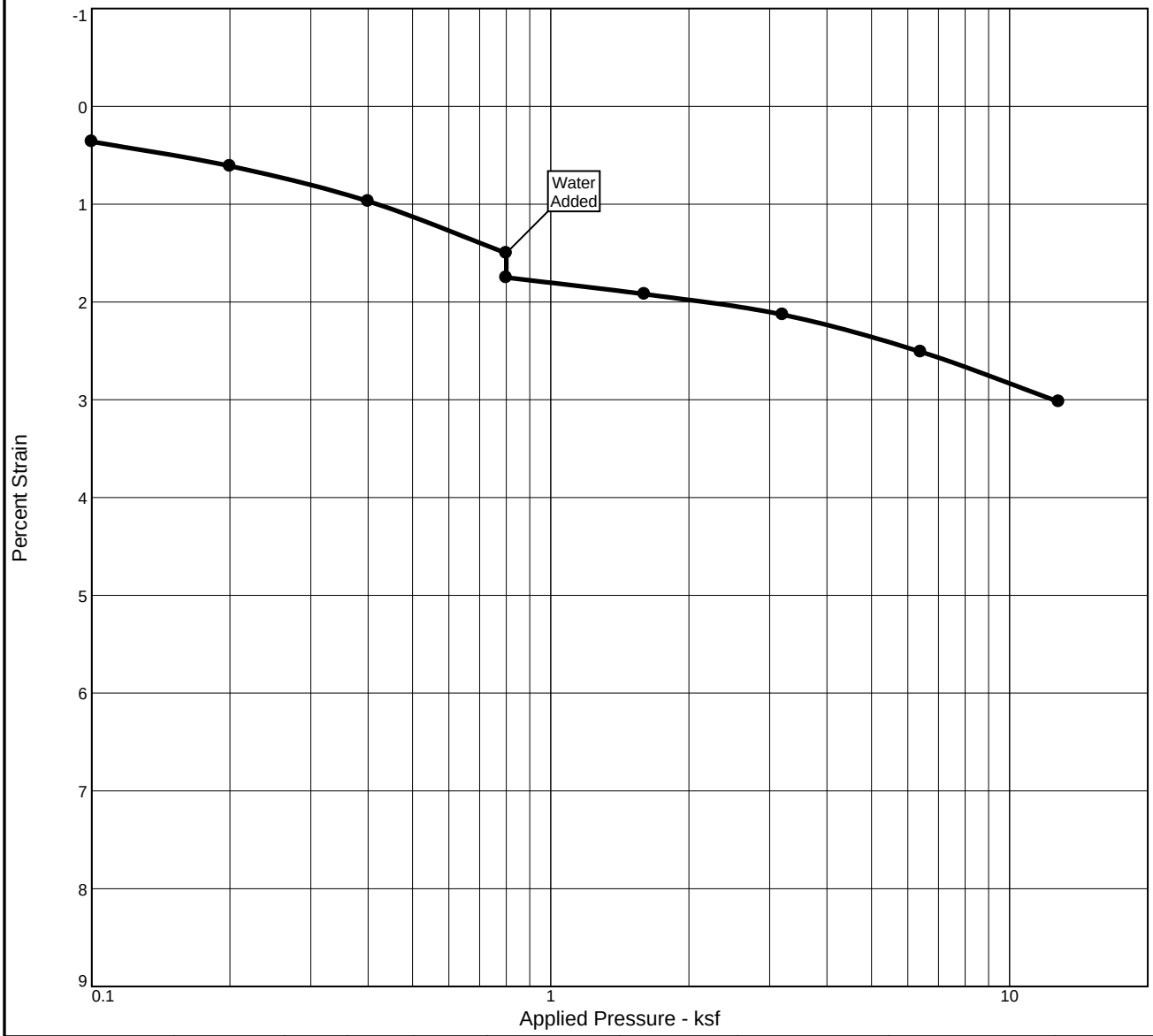
Remarks:
Undocumented Fill (Afu)

EnGEN Corporation

Figure

Tested By: MT

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	e_o	Swell Press. (ksf)	Clpse. %	C_r
Sat.	Moist.									
38.2 %	5.5 %	117.9			2.60		0.377		0.3	

MATERIAL DESCRIPTION	USCS	AASHTO
Silty Fine Sand, Dark Yellowish Brown (10YR 4/4)	SM	

Project No. 4891GS **Client:** EMWD

Project: Rice Road Pipeline

Source of Sample: B-2 **Depth:** 7.5' **Sample Number:** B-2 @ 7.5'

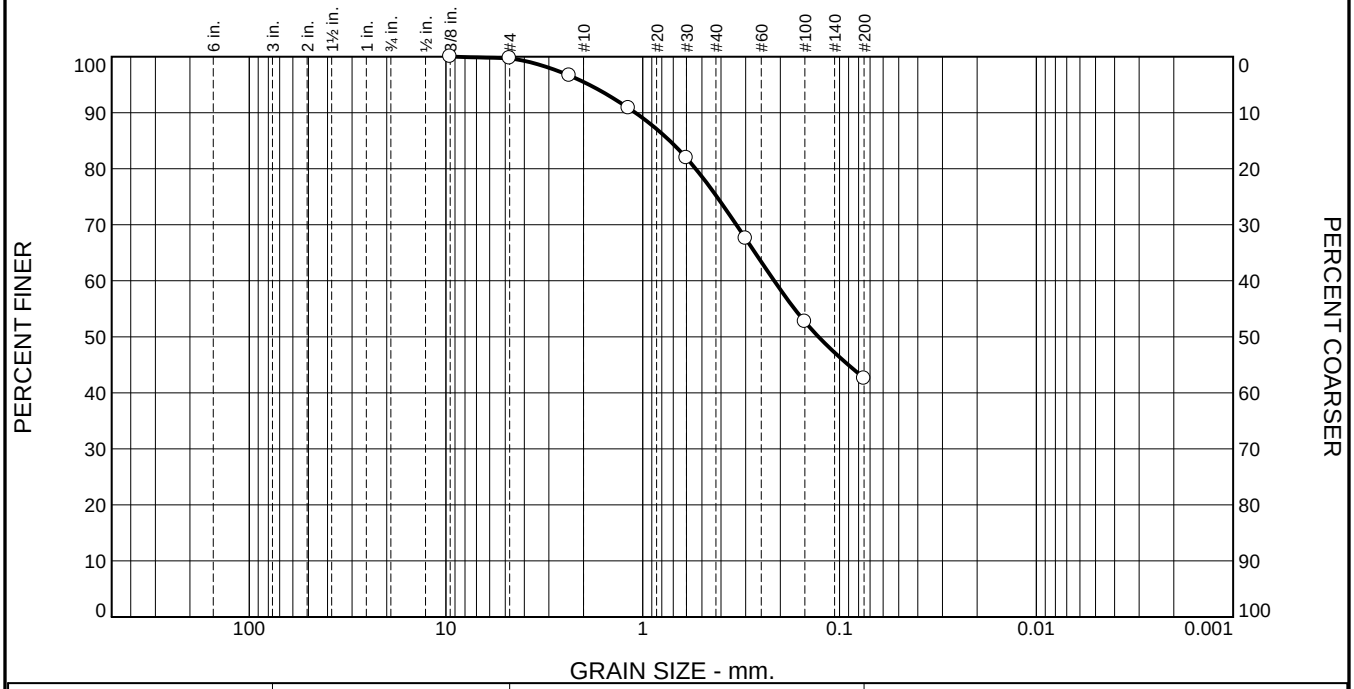
Remarks:
Undocumented Fill (Afu)

EnGEN Corporation

Figure

Tested By: MT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	4.2	20.2	32.7	42.6	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/8	100.0		
#4	99.7		
#8	96.6		
#16	90.8		
#30	81.9		
#50	67.5		
#100	52.7		
#200	42.6		

* (no specification provided)

Material Description

Silty fine sand

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= SM **AASHTO (M 145)=**

Coefficients

D_{90}= 1.0913 D_{85}= 0.7294 D_{60}= 0.2149
D_{50}= 0.1279 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sampled by MT
Natural Moisture: 21.0%
F.M.=1.11

Date Received: **Date Tested:** 10/5/22

Tested By: JP

Checked By:

Title:

Source of Sample: B-1 **Depth:** 10'
Sample Number: B-1 @ 10'

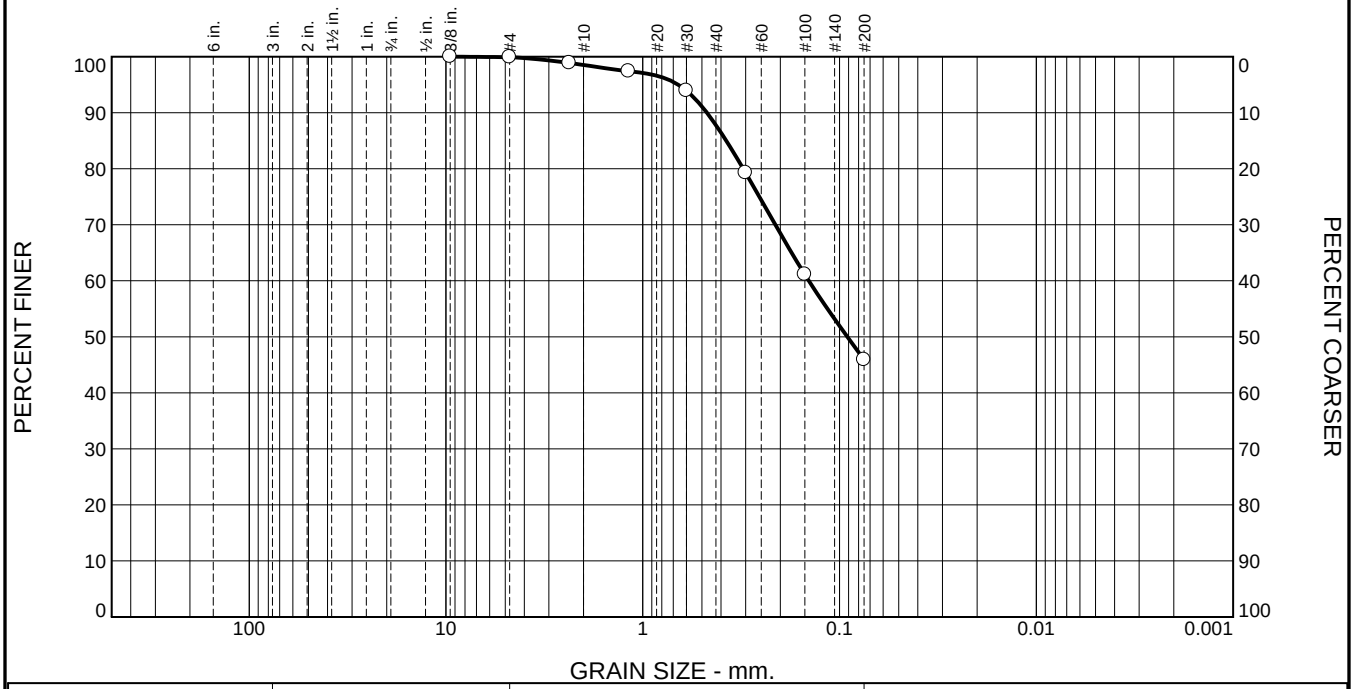
Date Sampled: 9/28/22

EnGEN Corporation

Client: EMWD
Project: Rice Road Pipeline

Project No: 4891GS **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	1.4	10.7	41.9	45.9	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/8	100.0		
#4	99.9		
#8	98.9		
#16	97.4		
#30	93.9		
#50	79.3		
#100	61.1		
#200	45.9		

* (no specification provided)

Material Description

Silty fine sand

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= SM **AASHTO (M 145)=**

Coefficients

D_{90}= 0.4721 D_{85}= 0.3763 D_{60}= 0.1432
D_{50}= 0.0913 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sampled by MT Natural Moisture: 20.7%
F.M.=0.70

Date Received: _____ **Date Tested:** 10/5

Tested By: JP

Checked By: _____

Title: _____

Source of Sample: B-1 **Depth:** 30'
Sample Number: B-1 @ 30'

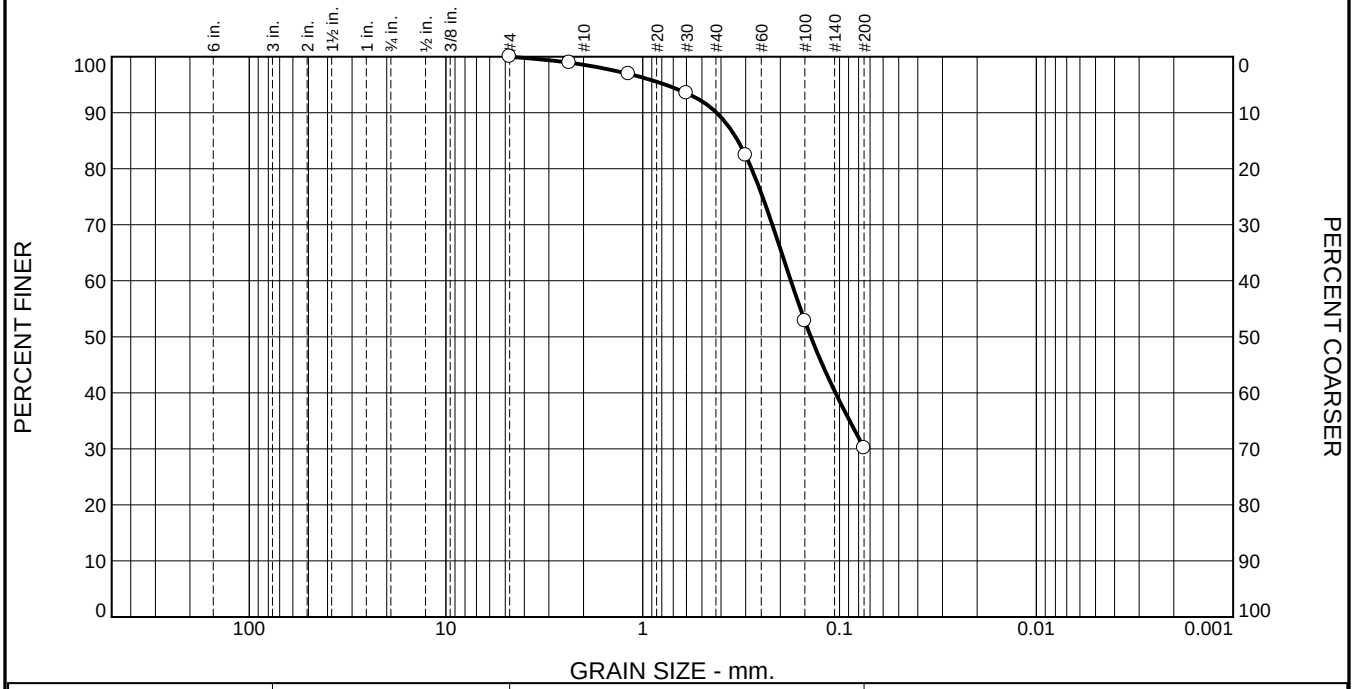
Date Sampled: 9/28/22

EnGEN Corporation

Client: EMWD
Project: Rice Road Pipeline

Project No: 4891GS **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.4	8.5	59.9	30.2	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#8	98.9		
#16	96.9		
#30	93.5		
#50	82.4		
#100	52.8		
#200	30.2		

* (no specification provided)

Material Description

Silty fine sand

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= SM **AASHTO (M 145)=**

Coefficients

D_{90}= 0.4212 D_{85}= 0.3282 D_{60}= 0.1766
D_{50}= 0.1398 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sampled by MT
Natural Moisture: 22.2%
F.M.=0.75

Date Received: **Date Tested:** 10/5/22

Tested By: JP

Checked By:

Title:

Source of Sample: B-1 **Depth:** 40'
Sample Number: B-1 @ 40'

Date Sampled: 9/28/22

EnGEN Corporation

Client: EMWD
Project: Rice Road Pipeline

Project No: 4891GS **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	4.4	17.9	61.9	14.9	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/8	100.0		
#4	99.1		
#8	95.8		
#16	90.6		
#30	84.3		
#50	64.2		
#100	31.0		
#200	14.9		

* (no specification provided)

Material Description

Silty fine sand

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= SM **AASHTO (M 145)=**

Coefficients

D_{90}= 1.0746 D_{85}= 0.6280 D_{60}= 0.2737
D_{50}= 0.2243 D_{30}= 0.1460 D_{15}= 0.0754
D_{10}= C_u= C_c=

Remarks

Sampled by MT
Natural Moisture: 20.6%
F.M.=1.35

Date Received: _____ **Date Tested:** 10/5/22

Tested By: JP

Checked By: _____

Title: _____

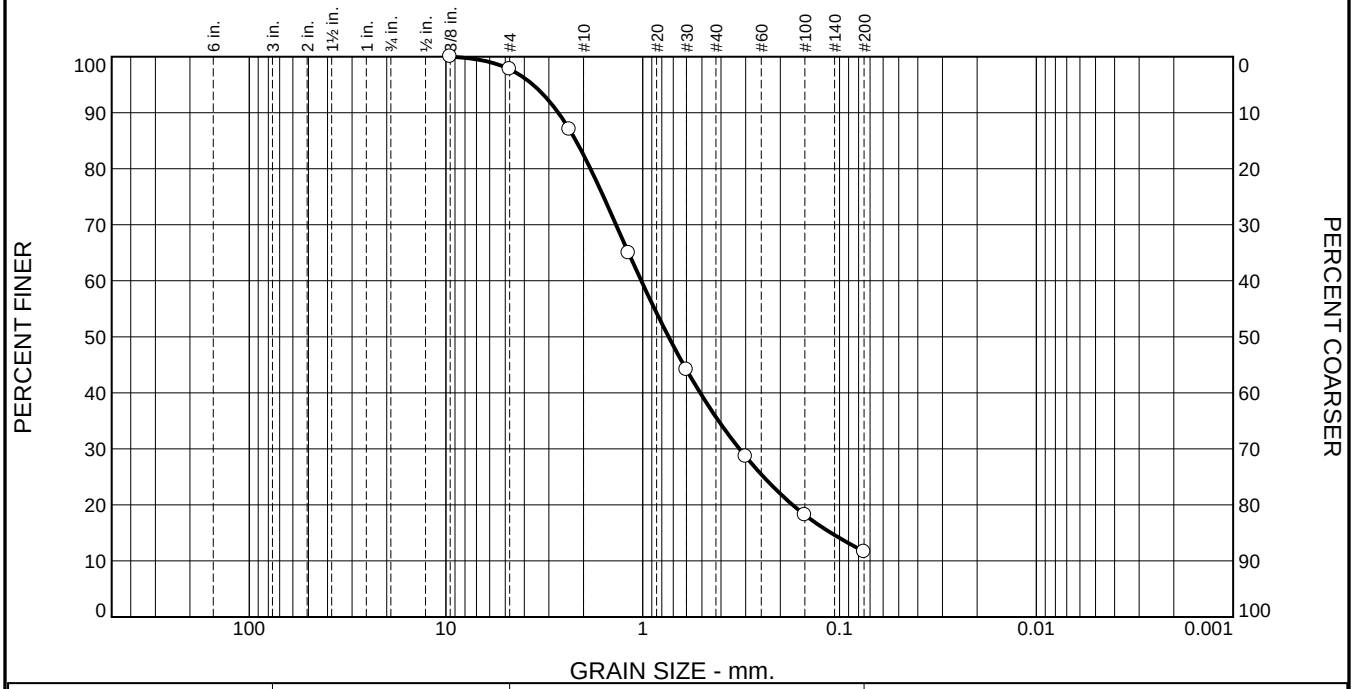
Source of Sample: B-1 **Depth:** 50' **Date Sampled:** 9/28/22
Sample Number: B-1 @ 50'

EnGEN Corporation

Client: EMWD
Project: Rice Road Pipeline

Project No: 4891GS **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.2	15.3	46.8	24.1	11.6	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/8	100.0		
#4	97.8		
#8	87.0		
#16	65.0		
#30	44.1		
#50	28.6		
#100	18.2		
#200	11.6		

* (no specification provided)

Material Description

Medium sand with silt

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= SP-SM **AASHTO (M 145)=**

Coefficients

D_{90}= 2.6860 D_{85}= 2.1851 D_{60}= 1.0174
D_{50}= 0.7389 D_{30}= 0.3224 D_{15}= 0.1103
D_{10}= C_u= C_c=

Remarks

Sampled by MT
Natural Moisture: 15.1%
F.M.=2.59

Date Received: _____ **Date Tested:** 10/6/22

Tested By: JP

Checked By: _____

Title: _____

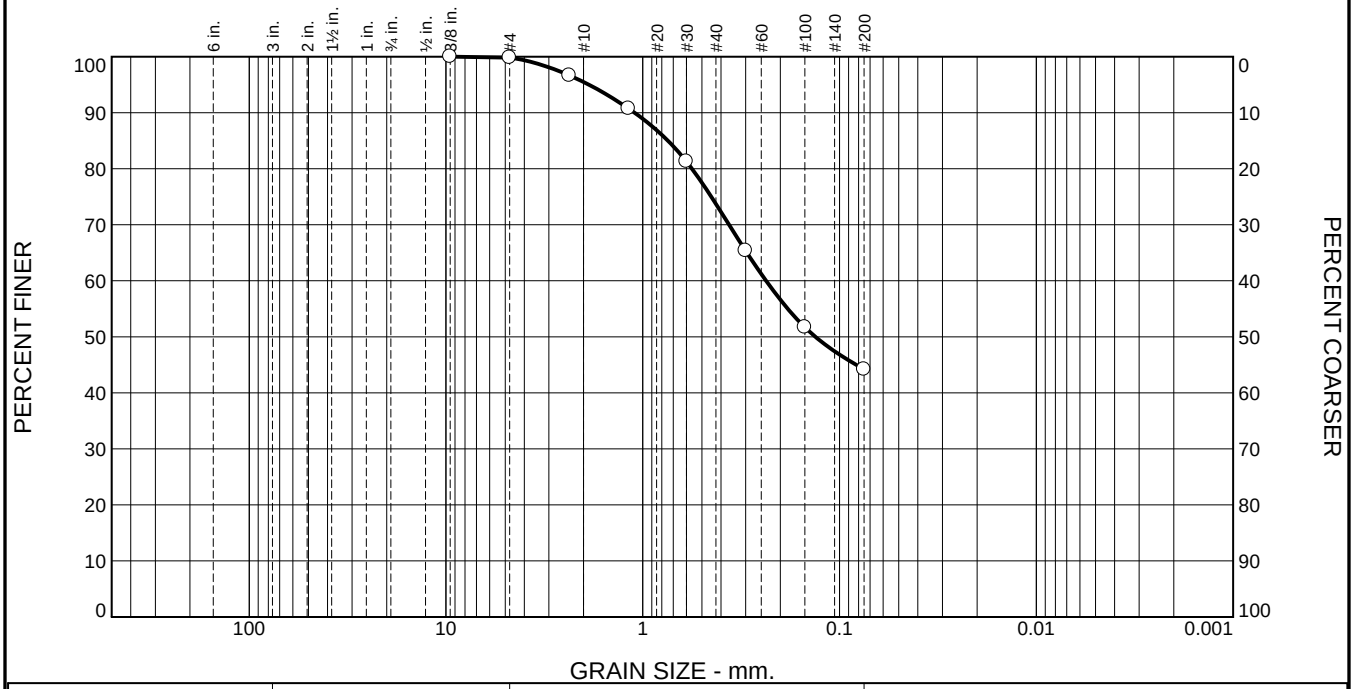
Source of Sample: B-1 **Date Sampled:** 9/28/22
Sample Number: B-1 @ 51.5'

EnGEN Corporation

Client: EMWD
Project: Rice Road Pipeline

Project No: 4891GS **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	4.3	21.8	29.5	44.2	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/8	100.0		
#4	99.8		
#8	96.7		
#16	90.7		
#30	81.3		
#50	65.4		
#100	51.7		
#200	44.2		

* (no specification provided)

Material Description

Silty fine to medium sand

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= SM **AASHTO (M 145)=**

Coefficients

D_{90}= 1.1012 D_{85}= 0.7451 D_{60}= 0.2363
D_{50}= 0.1326 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sampled by MT
Natural Moisture: 13.1%
F.M.=1.14

Date Received: **Date Tested:** 10/6/22

Tested By: JP

Checked By:

Title:

Source of Sample: B-2 **Depth:** 10'
Sample Number: B-2 @ 10'

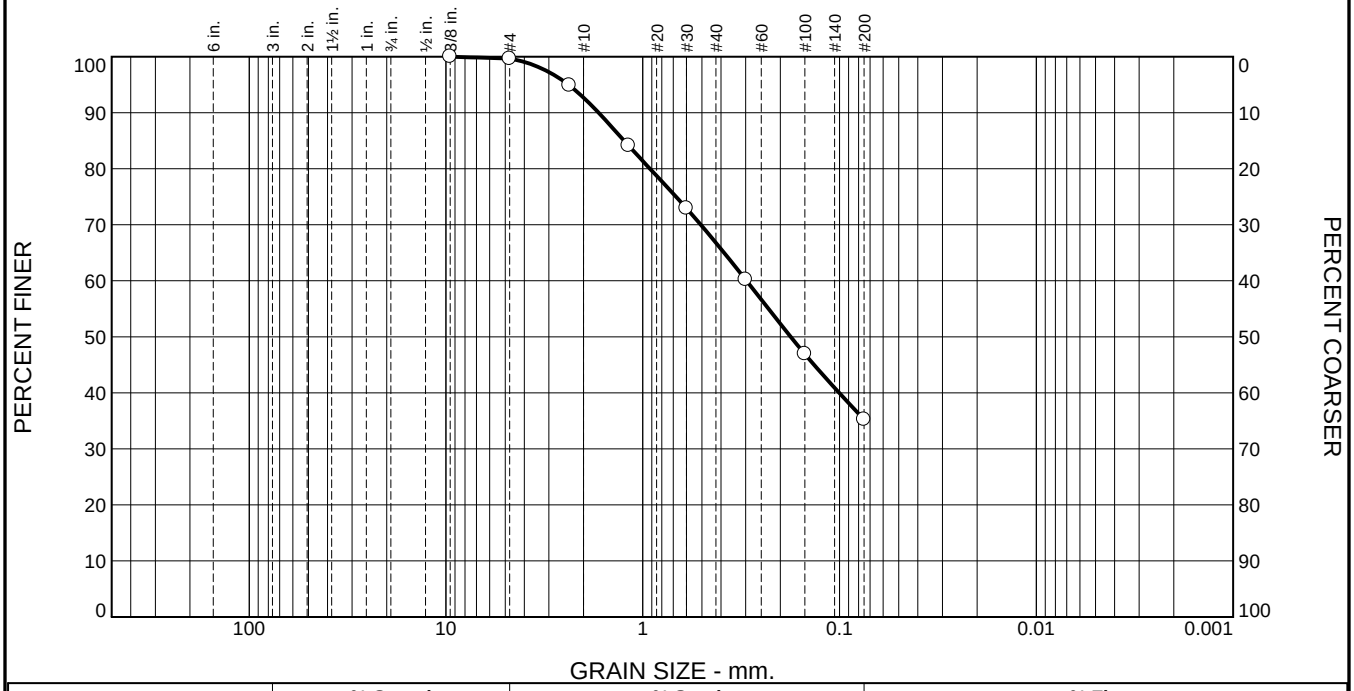
Date Sampled: 9/28/22

EnGEN Corporation

Client: EMWD
Project: Rice Road Pipeline

Project No: 4891GS **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	7.0	25.9	31.6	35.2	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/8	100.0		
#4	99.7		
#8	94.9		
#16	84.1		
#30	72.9		
#50	60.2		
#100	46.9		
#200	35.2		

* (no specification provided)

Material Description

Silty fine to medium sand

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= SM **AASHTO (M 145)=**

Coefficients

D_{90}= 1.6779 D_{85}= 1.2437 D_{60}= 0.2969
D_{50}= 0.1770 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sampled by MT
Natural Moisture: 17.0%
F.M.=1.41

Date Received: **Date Tested:** 10/5/22

Tested By: JP

Checked By:

Title:

Source of Sample: B-2 **Depth:** 20'
Sample Number: B-2 @ 20'

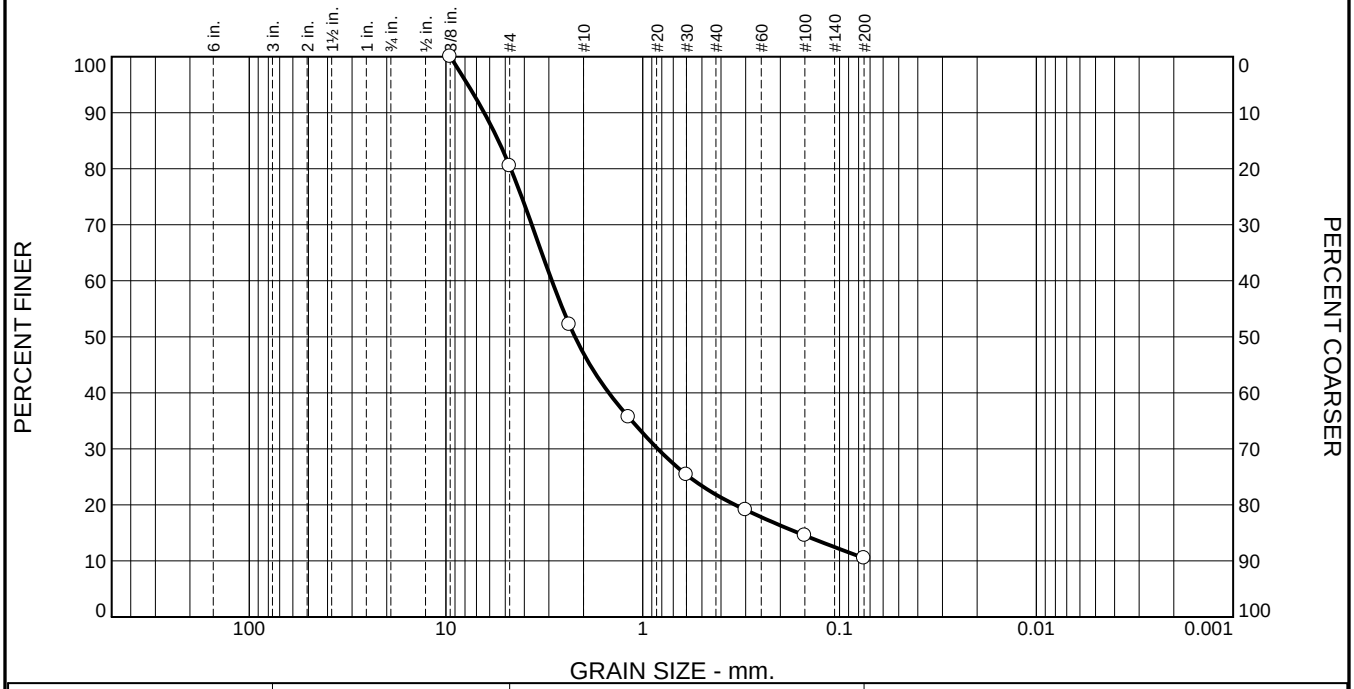
Date Sampled: 9/28/22

EnGEN Corporation

Client: EMWD
Project: Rice Road Pipeline

Project No: 4891GS **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	19.5	33.5	25.2	11.3	10.5	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/8	100.0		
#4	80.5		
#8	52.2		
#16	35.7		
#30	25.4		
#50	19.1		
#100	14.5		
#200	10.5		

* (no specification provided)

Material Description

Coarse to medium sand with silt

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= SP-SM **AASHTO (M 145)=**

Coefficients

D_{90}= 6.3962 D_{85}= 5.4152 D_{60}= 2.8959
D_{50}= 2.2107 D_{30}= 0.8386 D_{15}= 0.1620
D_{10}= C_u= C_c=

Remarks

Sampled by MT
Natural Moisture: 12.4%
F.M.=3.73

Date Received: _____ **Date Tested:** 10/5/22

Tested By: JP

Checked By: _____

Title: _____

Source of Sample: B-2 **Depth:** 30'
Sample Number: B-2 @ 30'

Date Sampled: 9/28/22

EnGEN Corporation

Client: EMWD
Project: Rice Road Pipeline

Project No: 4891GS **Figure**

ENGEN CORPORATION
Geotechnical & Environmental Services
41625 Enterprise Circle South
Temecula, California 62590
951.296.3511 – www. Engencorp.com

SOIL CORROSION TEST RESULTS

Job Number	4891GS
Client	EMWD
Sampled Date	9/28/22
Sampled By	MT/JTP
Lab Technician	BC
Test Date	10/5/22
Sample Location and Depth	B-1 @ 0'-5'

Soil Corrosion Parameter Test Results
(California Test Methods 643, 417, and 422)

Sample Number	Location and Depth	pH	Minimum Resistivity (ohm-cm)	Chloride (ppm)	Sulfate (ppm)
A-1	B-1 @ 0'-5'	7.38	2844	250	90

CALTRANS considers a site corrosive to foundation elements if one or more of the following conditions exist:

- The pH is equal to or less than 5.5
- The resistivity is equal to or less than 1,000 ohm-cm
- Chloride concentration is equal to or greater than 500 parts per million (ppm)
- Sulfate concentration is equal to or greater than 2,000 ppm.

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SOIL CORROSION TEST RESULTS

Job Number	4891GS
Client	EMWD
Sampled Date	9/28/22
Sampled By	MT/JTP
Lab Technician	BC
Test Date	10/10/22
Sample Location and Depth	B-2 @ 0'-5'

Soil Corrosion Parameter Test Results
(California Test Methods 643, 417, and 422)

Sample Number	Location and Depth	pH	Minimum Resistivity (ohm-cm)	Chloride (ppm)	Sulfate (ppm)
A-2	B-2 @ 0'-5'	7.20	1103	250-499	200

CALTRANS considers a site corrosive to foundation elements if one or more of the following conditions exist:

- The pH is equal to or less than 5.5
- The resistivity is equal to or less than 1,000 ohm-cm
- Chloride concentration is equal to or greater than 500 parts per million (ppm)
- Sulfate concentration is equal to or greater than 2,000 ppm.

CBC Laboratory Expansion Test Results

Job Number:	4891GS
Job Name:	Rice Road Pipeline
Location:	Rice Road, Winchester
Date:	10/05/22
Sample Source:	B-1 @ 0'-5'
Sampled by:	MT/JTP
Lab Technician:	BC
Sample Descr:	Silty Fine Sand, Yellowish Brown
Sample #:	A-1

Wet Compacted Wt.:	632.9
Ring Wt.:	199.7
Net Wet Wt.:	433.2
Wet Density:	130.8
Wet Soil:	100.6
Dry Soil:	92.9
Initial Moisture (%):	8.3%
Initial Dry Density:	120.8
% Saturation:	56.7%
Final Wt. & Ring Wt.:	647.9
Net Final Wt.:	448.2
Dry Wt.:	400.0
Loss:	48.2
Net Dry Wt.:	397.3
Final Density:	120.0
Saturated Moisture:	12.1%

	Dial	Change	Time
Reading 1:	0.100	N/A	12:00 PM
Reading 2:	0.100	0.000	12:15 PM
Reading 3:	0.100	0.000	12:30 PM
Reading 4:	0.100	0.000	5-Oct

Expansion Index:	0
Adjusted Index:	2.7
(CBC 18-2)	

EnGEN Corporation

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CBC Laboratory Expansion Test Results

Job Number:	4891GS
Job Name:	Rice Road Pipeline
Location:	Rice Road, Winchester
Date:	10/10/22
Sample Source:	B-2 @ 0'-5'
Sampled by:	MT/JTP
Lab Technician:	BC
Sample Descr:	Silty Fine Sand, Dark Yellowish Brown
Sample #:	A-2

Wet Compacted Wt.:	624.2
Ring Wt.:	199.7
Net Wet Wt.:	424.5
Wet Density:	128.2
Wet Soil:	100.8
Dry Soil:	93.5
Initial Moisture (%):	7.8%
Initial Dry Density:	118.9
% Saturation:	50.6%
Final Wt. & Ring Wt.:	646.7
Net Final Wt.:	447.0
Dry Wt.:	393.8
Loss:	53.2
Net Dry Wt.:	391.4
Final Density:	118.2
Saturated Moisture:	13.6%

	Dial	Change	Time
Reading 1:	0.100	N/A	12:00 PM
Reading 2:	0.101	0.001	12:15 PM
Reading 3:	0.101	0.001	12:30 PM
Reading 4:	0.101	0.001	11-Oct

Expansion Index:	1
Adjusted Index:	1.2
(CBC 18-2)	

EnGEN Corporation

41625 Enterprise Circle South, B-2

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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

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Lake Forest, California 92630
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14 May 2024

Jason Philpot
EnGEN Corporation
41625 Enterprise Circle South, B-2
Temecula, CA 92590

RE: Rice Road Pipeline

Enclosed are the results of analyses for samples received by the laboratory on 05/08/24 12:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jeff Lee
Project Manager

SunStar Laboratories, Inc.
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Lake Forest, California 92630
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EnGEN Corporation	Project: Rice Road Pipeline	
41625 Enterprise Circle South, B-2	Project Number: 4891GS	**Reported:**
Temecula CA, 92590	Project Manager: Jason Philpot	05/14/24 14:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
#1	T241959-01	Water	05/07/24 10:30	05/08/24 12:45
#2	T241959-02	Water	05/07/24 10:30	05/08/24 12:45

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EnGEN Corporation	Project: Rice Road Pipeline	
41625 Enterprise Circle South, B-2	Project Number: 4891GS	**Reported:**
Temecula CA, 92590	Project Manager: Jason Philpot	05/14/24 14:44

DETECTIONS SUMMARY

Sample ID: #1 **Laboratory ID:** T241959-01

Analyte	Result	Reporting Limit	Units	Method	Notes
pH	**6.5**	0.10	pH Units	SM 4500-H+B	O-04
Total Dissolved Solids	**2700**	10	mg/l	TDS by SM2540C	
pH Temperature °C	**23**		pH Units	SM 4500-H+B	O-04
Chloride	**545**	250	mg/l	EPA 300.0	

Sample ID: #2 **Laboratory ID:** T241959-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Calcium	**320**	5.0	mg/l	EPA 200.7	
Magnesium	**98**	1.0	mg/l	EPA 200.7	
Potassium	**12**	0.50	mg/l	EPA 200.7	
Sodium	**500**	5.0	mg/l	EPA 200.7	

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EnGEN Corporation	Project: Rice Road Pipeline	
41625 Enterprise Circle South, B-2	Project Number: 4891GS	**Reported:**
Temecula CA, 92590	Project Manager: Jason Philpot	05/14/24 14:44

#1

T241959-01 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
pH	**6.5**	0.10	pH Units	1	24E0151	05/09/24	05/10/24	SM 4500-H+B	O-04
pH Temperature °C	**23**		"	"	"	"	"	"	O-04
Total Dissolved Solids	**2700**	10	mg/l	"	24E0102	05/07/24	05/14/24	TDS by SM2540C	
Anions by EPA Method 300.0									
Chloride	**545**	250	mg/l	50	24E0124	05/08/24	05/08/24	EPA 300.0	
Bromide	ND	62.5	"	"	"	"	"	"	

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EnGEN Corporation	Project: Rice Road Pipeline	
41625 Enterprise Circle South, B-2	Project Number: 4891GS	**Reported:**
Temecula CA, 92590	Project Manager: Jason Philpot	05/14/24 14:44

#2

T241959-02 (Water)

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Metals by EPA 200 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**320**	5.0	mg/l	10	24E0115	05/09/24	05/13/24	EPA 200.7	
Magnesium	**98**	1.0	"	"	"	"	"	"	
Potassium	**12**	0.50	"	1	"	"	"	"	
Sodium	**500**	5.0	"	10	"	"	"	"	

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EnGEN Corporation	Project: Rice Road Pipeline	
41625 Enterprise Circle South, B-2	Project Number: 4891GS	**Reported:**
Temecula CA, 92590	Project Manager: Jason Philpot	05/14/24 14:44

Metals by EPA 200 Series Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 24E0115 - EPA 3010A										
Blank (24E0115-BLK1)				Prepared: 05/07/24 Analyzed: 05/13/24						
Copper	ND	0.005	mg/l							
LCS (24E0115-BS1)				Prepared: 05/07/24 Analyzed: 05/13/24						
Copper	1.62	0.005	mg/l	1.50		108	85-115			
Matrix Spike (24E0115-MS1)	**Source: T241937-01**			Prepared: 05/07/24 Analyzed: 05/13/24						
Copper	1.90	0.005	mg/l	1.50	0.342	104	70-130			
Matrix Spike Dup (24E0115-MSD1)	**Source: T241937-01**			Prepared: 05/07/24 Analyzed: 05/13/24						
Copper	1.93	0.005	mg/l	1.50	0.342	106	70-130	1.50	30	

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EnGEN Corporation	Project: Rice Road Pipeline	
41625 Enterprise Circle South, B-2	Project Number: 4891GS	**Reported:**
Temecula CA, 92590	Project Manager: Jason Philpot	05/14/24 14:44

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 24E0102 - General Preparation										
Blank (24E0102-BLK1)				Prepared: 05/07/24 Analyzed: 05/14/24						
Total Dissolved Solids	ND	10	mg/l							
LCS (24E0102-BS1)				Prepared: 05/07/24 Analyzed: 05/14/24						
Total Dissolved Solids	512	10	mg/l	500		102	80-120			
Duplicate (24E0102-DUP1)	**Source: T241924-04**			Prepared: 05/07/24 Analyzed: 05/14/24						
Total Dissolved Solids	551	10	mg/l		658			17.7	20	
Batch 24E0151 - General Preparation										
Duplicate (24E0151-DUP1)	**Source: T241959-01**			Prepared: 05/09/24 Analyzed: 05/10/24						
pH	6.53	0.10	pH Units		6.49			0.614	10	
pH Temperature °C	22.6		"		22.6			0.00	200	

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EnGEN Corporation	Project: Rice Road Pipeline	
41625 Enterprise Circle South, B-2	Project Number: 4891GS	**Reported:**
Temecula CA, 92590	Project Manager: Jason Philpot	05/14/24 14:44

Anions by EPA Method 300.0 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 24E0124 - General Preparation										
Blank (24E0124-BLK1)				Prepared & Analyzed: 05/08/24						
Fluoride	ND	0.500	mg/l							
Chloride	ND	5.00	"							
Sulfate as SO4	ND	5.00	"							
Bromide	ND	1.25	"							
LCS (24E0124-BS1)				Prepared & Analyzed: 05/08/24						
Fluoride	25.5	0.500	mg/l	25.0		102	75-125			
Chloride	23.3	5.00	"	25.0		93.2	75-125			
Sulfate as SO4	23.1	5.00	"	25.0		92.5	75-125			
Bromide	23.0	1.25	"	25.0		92.2	75-125			
Matrix Spike (24E0124-MS1)	**Source: T241941-02**			Prepared & Analyzed: 05/08/24						
Fluoride	25.8	0.500	mg/l	25.0	0.571	101	75-125			
Chloride	67.2	5.00	"	25.0	42.7	97.9	75-125			
Sulfate as SO4	34.6	5.00	"	25.0	11.2	93.7	75-125			
Bromide	22.9	1.25	"	25.0	1.02	87.7	75-125			
Matrix Spike Dup (24E0124-MSD1)	**Source: T241941-02**			Prepared & Analyzed: 05/08/24						
Fluoride	25.0	0.500	mg/l	25.0	0.571	97.5	75-125	3.27	20	
Chloride	66.9	5.00	"	25.0	42.7	96.8	75-125	0.418	20	
Sulfate as SO4	34.2	5.00	"	25.0	11.2	92.0	75-125	1.21	20	
Bromide	22.6	1.25	"	25.0	1.02	86.4	75-125	1.40	20	

SunStar Laboratories, Inc.



Jeff Lee, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

EnGEN Corporation	Project: Rice Road Pipeline	
41625 Enterprise Circle South, B-2	Project Number: 4891GS	**Reported:**
Temecula CA, 92590	Project Manager: Jason Philpot	05/14/24 14:44

Notes and Definitions

O-04	This sample was received and analyzed outside the EPA recommended holding time.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SunStar Laboratories, Inc.



Jeff Lee, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

AIR LABORATORY

Chain of Custody Record

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Client: ENGEN
Address: 41625 Enterprise Circle S, B-2
Phone: (951) 296-3511 Fax:
Project Manager: Jason Philpot

Date: 5/7/24 Page: 1 Of 1
Project Name: Rice Road Pipeline
Collector: Client Project #: 489165
Batch #: T241959 EDF #:

Laboratory ID #	Sample ID	Date Sampled	Start Time	Finish Time	Sample Type : Soil Gas / Indoor Air	Container Type: Summa Can / Tedlar	Initial Pressure	Final Pressure	~~TO-3~~ PH	~~TO-14~~ TDS	~~TO-15~~ Cl	~~Methane by GC-FID~~ Na	~~Fixed Gases by TCD~~ K	~~RSK-175~~ Ca^2	Mg^2	Summa Can, Manifold # / Comments
	#1	5/7/24		10:30AM	H_2O				✓	✓	✓	✓	✓	✓	✓	
	#2	↓		10:30AM	H_2O				✓	✓	✓	✓	✓	✓	✓	

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Jason Philpot	5/8/24 1111		5/8/24 1111
	5/8/24 1245		5/8/24 1245

Total # of containers: 2
Chain of Custody seals Y/N/NA:
Seals intact? Y/N/NA:
Received good condition/cold: 3.3°

Turn around time:

Notes

* TO-15 SIM analysis available upon prior notification. **(Precertified Summa cans needed)**

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

Rev. 02C Date 11/23
Receiving Form 001A

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T241959

Client Name: Engen

Project: Rice Road Pipeline

Delivered by: ☐ Client ☒ SunStar Courier ☐ GLS ☐ FedEx ☐ Other

If Courier, Received by: Mike

Date/Time Courier Received: 5/8/24 11:11

Lab Received by: Dave

Date/Time Lab Received: 5/8/24 1245

Total number of coolers received: 1 Thermometer ID: SC-1 Calibration due: 11/17/2024

Temperature: Cooler #1	3.2 °C +/- the CF (+ 0.1°C)	=	3.3 °C	corrected temperature
Temperature: Cooler #2	°C +/- the CF (+ 0.1°C)	=	°C	corrected temperature
Temperature: Cooler #3	°C +/- the CF (+ 0.1°C)	=	°C	corrected temperature

Temperature criteria = ≤ 6°C (no frozen containers) Within criteria? ☒ **Yes** ☐ **No** ☐ **N/A**

If NO:

Samples received on ice? ☐ Yes ☐ **No → Complete Non-Conformance Sheet**

If on ice, samples received same day collected? ☐ Yes → Acceptable ☐ **No → Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample	☐ Yes	☐ No*	☒ N/A
Sample containers intact	☒ Yes	☐ No*	
Sample labels match Chain of Custody IDs	☒ Yes	☐ No*	
Total number of containers received match COC	☒ Yes	☐ No*	
Proper containers received for analyses requested on COC	☒ Yes	☐ No*	
Proper preservative indicated on COC/containers for analyses requested	☒ Yes	☐ No*	☐ N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☒ **Yes**	☐ **No***	

* Complete Non-Conformance Receiving Sheet if checked

Cooler/Sample Review - Initials and date: M.L. 5/8/24

Comments:

(949) 297-5020 ■ www.sunstarlabs.com ■ 25712 Commercentre Drive ■ Lake Forest, CA 92630

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T241959

Client: **EnGEN Corporation** **Project Manager:** **Jeff Lee**
Project: **Rice Road Pipeline** **Project Number:** **4891GS**

Report To:
EnGEN Corporation
Jason Philpot
41625 Enterprise Circle South, B-2
Temecula, CA 92590

Date Due: 05/15/24 17:00 (5 day TAT)
Received By: Dave Berner Date Received: 05/08/24 12:45
Logged In By: Jeff Lee Date Logged In: 05/08/24 15:55

Samples Received at: **3.3°C**
Custody Seals No Received On Ice Yes
Containers Intact Yes
COC/Labels Agree Yes
Preservation Confirı No

Analysis	Due	TAT	Expires	Comments
T241959-01 #1 [Water] Sampled 05/07/24 10:30 (GMT-08:00) Pacific Time (US &				
300.0 - F, Cl, Br, SO4	05/15/24 15:00	5	06/04/24 10:30	Chloride Only
pH water SM 4500-H+B	05/13/24 15:00	3	05/08/24 10:30	
TDS-160.1	05/15/24 15:00	5	05/14/24 10:30	
T241959-02 #2 [Water] Sampled 05/07/24 10:30 (GMT-08:00) Pacific Time (US &				
200.7	05/15/24 15:00	5	11/03/24 10:30	Na, K, CA, and Mg Only

Reviewed By Date

Appendix 3 - Geotechnical Boring Logs

GEOTECHNICAL BORING LOG SUMMARY

Project Number: 4891GS
Project: EMWD Rice Road Pipeline Project
Boring Number: B1
Surface Elevation: 1463.5
Date: 09-28-2022
Logged By: MT

Elevation	Soil Graphic	Description	Sampler	Sample Depth	USCS	Blow Count	PID (ppm)	% In-Situ Moisture Content	Percent Passing #200 Sieve	Dry Density
0		UNDOCUMENTED FILL (Afu) Cuttings consisted of sitly fine sand dry, loose, Yellowish brown (10YR 5/6) composite bulk samples taken from 1'-5', no in-situ samples taken		0	SM		ND			
2.5		SAME AS ABOVE Excessive Rock/gravel			SM	50 for 4"	ND			
5.0		SAME AS ABOVE		5	SM	50 for 4"	ND			
7.5		SAME AS ABOVE			SM	18-24-20	ND			
10.0		YOUNG ALLUVIUM (Qal) STREAM DEPOSITS Silty fine sand, yellowish brown (10YR 5/6), moist, loose, trace pinhole size pores		10	SM	5-3-5	ND		42.6	
15.0		Silty fine sand, with some gravel, yellowish brown (10YR 5/8), moist, medium dense GROUNDWATER @ 15.4'		15	SM	7-9-7	ND			112.8
20.0		SAME AS ABOVE Saturated		20	SM	6-6-12	ND			
22.5		Coarse to medium sand, transitions to silty coarse to medium sand, yellowish brown (10YR 5/8), saturated			SP-SM		ND			
25.0		SAMPLE NOT RECOVERED water caused heaving bucket of water poured into bore hole to release sampler		25	SP		ND			
30.0		Silty fine sand, brown (10YR 5/3), saturated, very loose		30	SM	1-1-2	ND		45.9	
32.5		Coarse to medium sand, yellowish brown (10YR 5/8), saturated			SP		ND			
35.0		Silty fine sand, yellowish brown (10YR 5/8), saturated, medium dense		35	SM	9-14-6	ND			118.9

Notes: ACCURATE AMSL UNAVAILABLE - BORING CONVERTED TO GW MONITORING WELL

GEOTECHNICAL BORING LOG SUMMARY

Project Number: 4891GS
Project: EMWD Rice Road Pipeline Project
Boring Number: B1
Surface Elevation: 1461
Date: 09-28-2022
Logged By: MT

Elevation	Soil Graphic	Description	Sampler	Sample Depth	USCS	Blow Count	PID (ppm)	% In-Situ Moisture Content	Percent Passing #200 Sieve	Dry Density
40.0		SAME AS ABOVE		40	SM	3-6-8	ND		30.2	
45.0		Medium sand, brown (10YR 5/3), saturated, dense		45	SP	7-23-25	ND			
50.0		Silty fine sand, brown (10YR 5/3), medium dense		50	SM	5-12-11	ND		14.9	
55.0		Medium sand with silt, Brown (10YR 5/3), saturated, medium dense BOTTOM OF BORING @ 55' GROUNDWAER MEASURED @ 15.4' BGS. NO VISABLE EVIDENCE OF OF HISTORICAL HIGH GROUNDWATER CONDITIONS OBSERVED ABOVE EXISTING WATER TABLE.		55 60 65 70	SP-SM	3-9-17	ND		11.6	

Notes: ACCURATE AMSL UNAVAILABLE - BORING CONVERTED TO GW MONITORING WELL

GEOTECHNICAL BORING LOG SUMMARY

Project Number: 4891GS
Project: EMWD Rice Road Pipeline Project
Boring Number: B2
Surface Elevation: 1466.2
Date: 09-28-2022
Logged By: MT

Elevation	Soil Graphic	Description	Sampler	Sample Depth	USCS	Blow Count	PID (ppm)	% In-Situ Moisture Content	Percent Passing #200 Sieve	Dry Density
0		ASPHALT		0			ND			
.4"		Aggragate Base Material			SM		ND			
.8"		UNDOCUMENTED FILL (Afu)			SP/GP		ND			
1.2		Silty fine Sand, dark yellowish brown (10YR 4/4),					ND			
2.5		slightly moist, dense SAME AS ABOVE SAME AS ABOVE			SM	6-20-33	ND	8.0		102.0
5.0		SAME AS ABOVE, with gravel		5	SW-SP	12-22-19	ND	7.9		121.8
7.5		SAME AS ABOVE, medium dense			SW-SP	10-17-14	ND	5.5		117.9
10		YOUNG ALLUVIUM (Qal) STREAM DEPOSITS Silty fine to medium sand, yellowish brown (10YR 5/6), moist, loose (no pores), few calcium stringers		10	SM	2-3-4	ND		44.2	
15		Silty fine to medium sand, brown (10YR 4/3) moist, loose, trace pinhole pores		15	SM	5-10-15	ND	13.7		114.1
20		SAME AS ABOVE		20	SM	2-4-7	ND		35.2	
25		WEATHERED GRANITIC MATERIAL Recovered as coarse to medium sand with trace of very fine sand		25	SW-SP	18-50 for 6"	ND	10.7		120.7
27.5		Less weathered, greyish brown (10YR 5/2) Groundwater @ 27.5' Slow production advance of drill rig					ND			
30		Coarse to medium sand with silt, greyish brown (10YR 5/2)		30	SP-SM	50 for 2"	ND		10.5	
32		REFUSAL @ 32.2' NO VISUAL EVIDENCE OF HISTORICAL HIGH GROUNDWATER CONDITIONS OBSERVED ABOVE 10'BELOW GROUND SURFACE (BGS)		35	SP		ND			

Notes: ACCURATE AMSL UNAVAILABLE

Appendix 4 – Seismic Refraction Survey

TERRA GEOSCIENCES

SEISMIC REFRACTION SURVEY

EMWD RICE ROAD PIPELINE ALIGNMENT

RICE ROAD AND OLIVE AVENUE

WINCHESTER, RIVERSIDE COUNTY, CALIFORNIA

Project No. 233939-1

April 17, 2023

Prepared for:

EnGEN, Inc.
41625 Enterprise Circle South, "B-2"
Temecula, CA 92591

Consulting Engineering Geology & Geophysics

P.O. Box 1090, Loma Linda, CA 92354 • 909 796-4667

EnGEN, Inc.
41625 Enterprise Circle South, "B-2"
Temecula, CA 92591

Attention: Mr. Wayne Baimbridge, CEO

Regarding: Seismic Refraction Survey
EMWD Rice Road Pipeline Alignment
Rice Road and Olive Avenue
Winchester, Riverside County, California
EnGEN Project No. 4891GS

INTRODUCTION

In accordance with your request, we have completed a non-invasive geophysical survey using the seismic refraction method within the general proximity of the subject proposed pipeline alignment, as referenced above. We understand at this time that a 24-inch waterline and a 24-inch sewerline, housed within a 72-inch casing, is proposed to be constructed below Salt Creek via a microtunnel. This pipeline will be constructed using horizontal directional drilling along the alignment of Rice Road. This report describes in further detail the seismic refraction methodology, field procedures used, data processing of the various seismic modeling programs utilized, and the results of this survey, along with presentation of the subsurface seismic models and associated data. As authorized by you, the following services were performed:

- *Review of available pertinent published and unpublished geologic and geophysical data in our files pertaining to the site, along with a field reconnaissance.*
- *Conducting a geophysical survey using the seismic refraction method, which consisted of four survey traverses, to aid in evaluating the deeper subsurface lithology and geologic structure present beneath the subject site. The field survey and the data analysis were performed by a licensed State of California Professional Geophysicist.*
- *Preparation of representative geologic seismic models and associated data, created from a compilation of various computer data analytical programs.*
- *Preparation of this report, presenting the results of our interpretation of the geophysical data.*

Accompanying Maps and Appendices

Plate 1 - Seismic Line Location Map
Appendix A - Layer Velocity Models
Appendix B - References

PROJECT SUMMARY

As requested, we have performed a geophysical survey using the seismic refraction method along selected portions of the subject study area that were accessible, as directed by you. The site is situated along the northern extension of Rice Road between Olive Avenue to the north and Dominigoni Parkway to the south, in the Winchester area of Riverside County, California. We understand that a 72-inch diameter pipeline is to be constructed beneath the existing Salt Creek, to a depth of up to 24± feet below the existing ground surface.

Locally, as shown on Figure 1 below, mapping by Morton (2003) indicates the subject study area to be predominantly mantled by younger alluvial valley deposits (Holocene and late Pleistocene age), which generally consists of unconsolidated gravel, sand, and silt (map symbol Qyv), along with old alluvial fan deposits (late to middle Pleistocene age) that are described as being comprised of indurated reddish-brown gravel and sand (map symbol Qof). Underlying these deposits at depth is Cretaceous age granitic rock, comprised of massive to foliated hornblende-biotite granodiorite grading into tonalite (map symbol Kdvg).

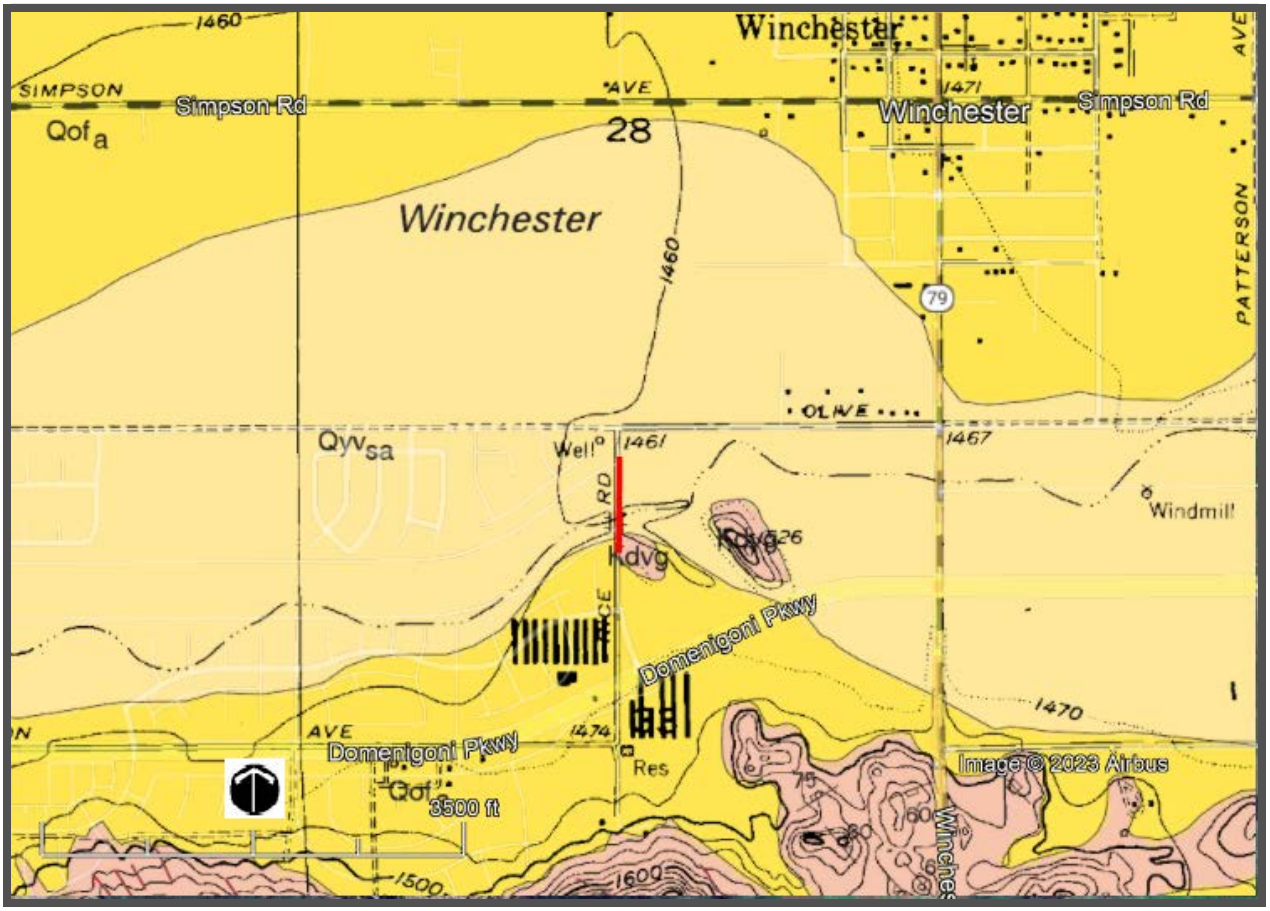


FIGURE 1- Geologic Map (Morton, 2003); Proposed pipeline shown in red.

The purpose of this geophysical study was to provide both a qualitative and quantified geophysical analysis of the subsurface earth materials, using the seismic refraction method, in order to ascertain the approximate contact boundaries between the varying earth materials at depth, predominantly with respect to the depth of granitic bedrock along the local areas surveyed.

Our study involved using various seismic refraction computer modeling programs for both quality control and comparative purposes, which allowed for an unbiased and more thorough analysis. Each of these modeling programs, as described in more detail further in this report, have both strengths and limitations and it was our intention to compile these models to form a more coherent representation of the interpreted subsurface geologic structure.

The locations of the seismic traverses that were selected by your firm for this study, were based on unobstructed areas that were as close as possible to the proposed pipeline alignment. These positions were then located in the field using Google™ Earth imagery and GPS (Global Positioning System) coordinates. These field locations have been approximated on the Seismic Line Location Map, Plate 1, of which the base map is a captured Google™ Earth (2023) image.

SUMMARY OF SEISMIC REFRACTION SURVEY

Methodology

Seismic refraction is a surface geophysical method that utilizes the refraction of seismic waves along geologic layers, which can help in differentiating the subsurface conditions. The seismic refraction method is well suited to identify whether there is a distinct velocity change at depth which could represent a possible subsurface structural differential. The seismic refraction method consists of measuring (at known points along the surface of the ground) the travel times of compressional waves generated by an impulsive energy source and can be used to estimate the layering, structure, and seismic acoustic velocities of subsurface horizons. Seismic waves travel down and through the soils and rocks, and when the wave encounters a contact between two earth materials having different velocities, some of the wave's energy travels along the contact at the velocity of the lower layer.

The fundamental assumption is that each successively deeper layer has a velocity greater than the layer immediately above it. As the wave travels along the contact, some of the wave's energy is refracted toward the surface where it is detected by a series of motion-sensitive transducers (geophones). The arrival time of the seismic wave at each of the geophone locations can be related to the relative seismic velocities of the subsurface layers in feet per second (fps), which can then be used to aid in interpreting both the depth and type of materials encountered.

Field Procedures

Four refraction survey lines were performed (Seismic Lines S-1 through S-4) along representative areas across the subject study area as selected by you. The traverses are delineated on Plate 1, for reference. The survey traverses were each 150 feet in length, which consisted of a total of twenty-four 14-Hertz geophones, spaced at regular six-foot intervals, in order to detect both the direct and refracted waves. To produce these seismic waves, a 16-pound sledge-hammer was used as the energy source. Multiple hammer impacts were utilized at each shot point in order to increase the signal to noise ratio, which enhanced the primary seismic "P"-waves.

The seismic wave arrivals were digitally recorded in SEG-2 format on a Geometrics Geode model signal enhancement refraction seismograph. Seven shot points were utilized along each spread using forward, reverse, and several intermediate locations in order to obtain high resolution survey data for velocity analysis and depth modeling purposes. The data was acquired using a sampling rate of 0.0625 milliseconds having a record length of 0.064 to 0.08 seconds. No acquisition filters were used during data collection.

During acquisition, the seismograph displays the seismic wave arrivals on the computer screen which were used to analyze the arrival time of the primary seismic "P"-waves at each geophone station, in the form of a wiggle trace for quality control purposes in the field. If spurious "noise" was observed, the shot location was resampled during relatively quieter periods. Each geophone and seismic shot location were surveyed using a hand level and ruler for topographic correction, with "0" being the lowest point along each survey line.

Data Processing

The recorded seismic data was subsequently transferred to our office computer for processing and analyzing purposes, using the computer programs **SIPwin** (**S**eismic Refraction **I**nterpretation **P**rogram for **Win**dows) developed by Rimrock Geophysics, Inc. (2004) and **Refractor**, developed by Geogiga Technology Corporation (2001-2023). These computer programs perform their individual analyses using exactly the same input data, which includes the first-arrival times of the "P"-waves and the survey line geometry.

- **SIPwin** is a ray-trace modeling program that evaluates the subsurface using layer assignments based on time-distance curves and is better suited for layered media, using the "Seismic Refraction Modeling by Computer" method (Scott, 1973). The first step in the modeling procedure is to compute layer velocities by least-squares techniques. Then the program uses the delay-time method to estimate depths to the top of layer-2. A forward modeling routine traces rays from the shot points to each geophone that received a first-arrival ray refracted along the top of layer-2.

The travel time of each such ray is compared with the travel time recorded in the field by the seismic system. The program then adjusts the layer-2 depths so as to minimize discrepancies between the computed ray-trace travel times and the first arrival times picked from the seismic waveform record. The process of ray tracing and model adjustment is repeated a total of six times to improve the accuracy of depths to the top of layer-2. This first-arrival picks were then used to generate the Layer Velocity Models using the **SIPwin** computer program, which presents the subsurface velocities as individual layers and are presented within Appendix A for reference. In addition, the associated Time-Distance Plot for each survey line, which shows the individual data picks of the first "P-wave" arrival times, also appears in Appendix A.

- **Refractor** is seismic refraction software that also evaluates the subsurface using layer assignments utilizing interactive and interchangeable analytical methods that include the Delay-Time method, the Plus-Minus method, and the Generalized Reciprocal Method (GRM). These methods are used for defining irregular non-planar refractors and are briefly described below.

    - The Delay-Time method will measure the delay time depth to a refractor beneath each geophone rather than at shot points. Delay-time is the time spent by a wave to travel up or down through the layer (slant path) compared to the time the wave would spend if traveling along the projection of the slant path on the refractor.

    - The Plus-Minus time analysis method includes a Plus-time analysis for depth analysis and a Minus-time analysis for velocity determination. The basis of the Plus-Minus time analysis method lies in the traveltime reciprocity, i.e., the traveltime of a seismic wave from source to receiver is equal to the traveltime in the opposite direction if source and receiver are interchanged. It can be used to calculate the depth and velocity variations of an undulating layer boundary for slope angles less than ~10°.

    - The GRM method is a technique for delineating undulating refractors at any depth from in-line seismic refraction data consisting of forward and reverse travel-times and is capable of resolving dips of up to 20% and does not over-smooth or average the subsurface refracting layers. In addition, the technique provides an approach for recognizing and compensating for hidden layer conditions.

The combined use of these computer programs provided a more thorough analysis of the subsurface structure and velocity characteristics with respect to evaluating the contact boundary between the landfill materials and the underlying native alluvial deposits. All of the computer programs perform their analysis using exactly the same input data which includes first-arrival "P"-waves and survey line geometry.

SUMMARY OF DATA ANALYSIS

As previously discussed, the primary purpose of the seismic refraction survey was to attempt to discern the approximate contact boundaries between the native earth materials at depth, principally, the depth of the bedrock contact. In general, the site where locally surveyed was noted to be characterized by three major subsurface layers (Layers V1, V2, and V3) with respect to seismic velocities. The following velocity layer summaries have been prepared using the **SIPwin** and **Refractor** analysis, with the representative Layer Velocity Models presented within Appendix A along with their respective Time-Distance Plots, for reference.

- ***Velocity Layer V1:***

  This uppermost velocity layer (V1) revealed average weighted seismic velocities of 1,227 to1,365 fps , which is typical for unconsolidated younger alluvial deposits, such as mapped by Morton (2003) as shown on Figure 1 (map symbol Qyv). Possible localized fill materials may also be present associated with previous earthwork in the area.

- ***Velocity Layer V2:***

  The second layer (V2) yielded an average weighted velocity of 1,943 to 2,592 and most likely corresponds to native older alluvial deposits, which underlie the surficial younger alluvial deposits as described above. These deposits have been mapped by Morton (2003) locally just to the south, as shown on Figure 1 (map symbol Qof). Although not highly anticipated, it is also possible that this velocity layer could locally consist of completely- to highly-weathered decomposed granitic bedrock, which can also have these velocities. .

  The V2a velocity layer underlying Seismic Line S-4 has an average weighted velocity of 5,666 fps, which appears to consist of saturated older alluvial materials. Saturated sediments typically have velocities ranging from 5,000 fps (approximate speed of sound waves in free-water) to 7,000 fps, depending on the lithologic and consolidated nature of the subsurface materials (Milson, 1989) of which the groundwater fills within the interstitial pore spaces. Therefore, the V2/V2a contact is believed to represent the interface of the groundwater table.

- ***Velocity Layer V3:***

  The third layer (V3) indicates the presence of slightly-weathered granitic bedrock, having a seismic velocity range of 8,613 to 10,958 fps. These higher velocities could indicate the presence of abundant widely-scattered buried fresh large crystalline boulders in moderately-weathered matrix, or possibly a more homogeneous slightly-weathered to fresher crystalline bedrock matrix, that has a wide-spaced fracture system. This bedrock appears to be consistent with the local mapping by Morton (2003) just to the south and east of the project study area (map symbol Kdvg, see Figure 1).

SUMMARY OF FINDINGS AND CONCLUSIONS

The raw field data appeared to be of good quality with minor amounts of ambient “noise” that was introduced during our survey, most likely from nearby heavy equipment that was operating, distant vehicular traffic, and high-frequency communication sources. Analysis of the data and picking of the primary “P”-wave arrivals was therefore performed with some difficulty, with minor amounts of interpolation of the data being necessary. The Time-Distance Plots, as presented within Appendix A, have been included to present the results of the data picks of the first-arrivals of the “P”-Waves. For the most part, the data points were found to be fairly linear with sharp, distinct slope breaks producing the various contact boundaries.

The velocities of the overlying earth materials (Velocity Layers V1 and V2) were found to be consistent to that of both younger and older alluvial unconsolidated sediments and would be expected to excavate without any major difficulty. Groundwater is believed to be present locally below Seismic Line S-4. It is most likely that the earth materials comprising this layer (Velocity Layer V2a) consist of older alluvium that is saturated. The presence of granitic bedrock materials below this groundwater table cannot be ascertained.

The seismic velocities measured within the V3 velocity layer at depth appears to be consistent with that of slightly-weathered granitic bedrock, of which these rocks have been mapped within proximity to the subject study area as surficial outcrops. The velocities of the granitic bedrock encountered are within the “non-rippable” range (Caterpillar, 2019), which generally includes granitic rocks having seismic velocities generally greater than 8,000 fps. Any excavations encountering this granitic bedrock would most likely need significant blasting to achieve desired grade.

CLOSURE

The field geophysical survey was performed on April 15, 2023 by the undersigned using "state of the art" geophysical equipment and techniques along the selected seismic traverse locations. It should be noted that our data presented within this report was obtained along four specific locations therefore other areas in the local may contain different velocity layers and depths not encountered during our field survey. Additional survey traverses may be necessary to further evaluate the excavation characteristics across other portions of the site, if warranted. Estimates of layer velocity boundaries as presented in this report are generally considered to be within 10± percent of the total depth of the contact.

It is important to understand that the fundamental limitation for seismic refraction surveys is known as nonuniqueness, wherein a specific seismic refraction data set does not provide sufficient information to determine a single “true” earth model. Therefore, the interpretation of any seismic data set uses “best-fit” approximations along with the

geologic models that appear to be most reasonable for the local area being surveyed. Client should also understand that when using the theoretical geophysical principles and techniques discussed in this report, sources of error are possible in both the data obtained, and in the interpretation, and that the results of this survey may not represent actual subsurface conditions. These are all factors beyond **Terra Geosciences** control and no guarantees as to the results of this survey can be made. We make no warranty, either expressed or implied.

In summary, the results of this seismic refraction survey are to be considered as an aid to assessing the depth limits of the fill/spoil materials locally. This information should be carefully reviewed and representative "test" excavations should be considered, so that they may be correlated with the data presented within this report.

Respectfully submitted,
TERRA GEOSCIENCES



Donn C. Schwartzkopf
Professional Geophysicist
PGP 1002



SEISMIC LINE LOCATION MAP



Base Map: Google™ Earth imagery (2023); Seismic traverses S-1 through S-4 shown as red/yellow lines.

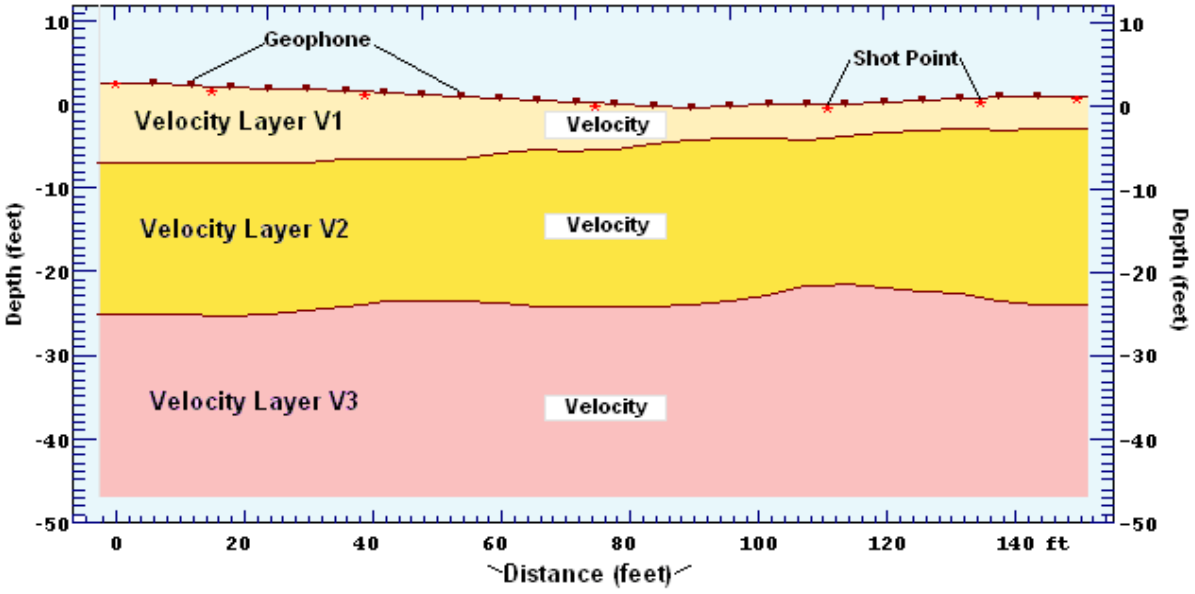
APPENDIX A

LAYER VELOCITY MODELS

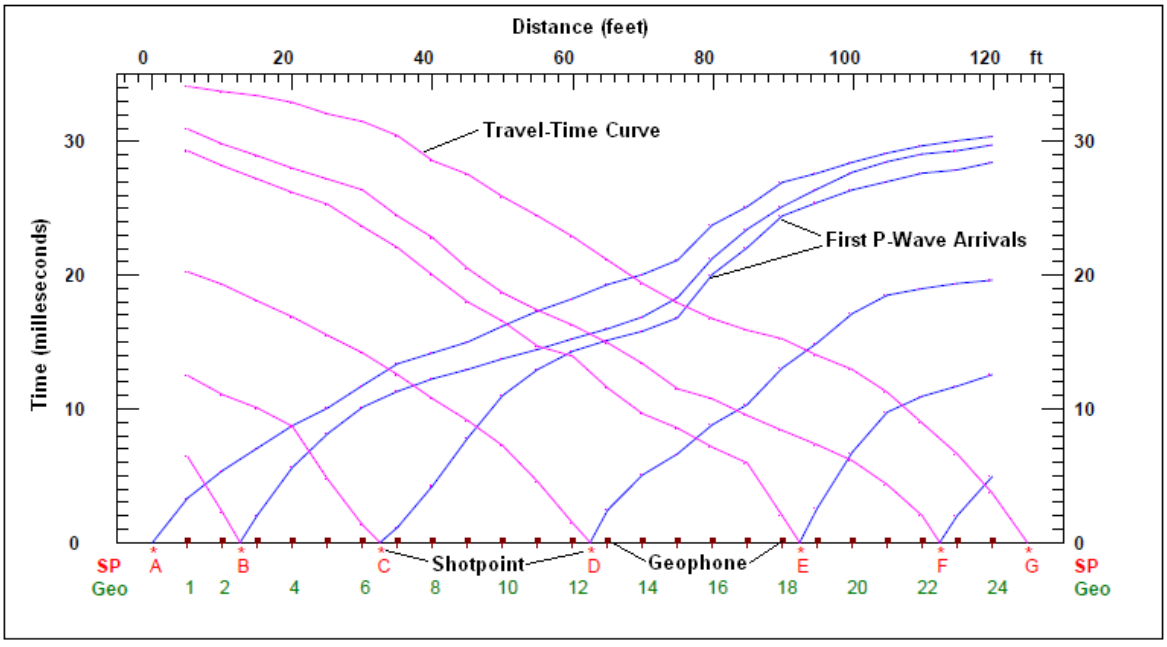


LAYER VELOCITY MODEL LEGEND

LAYER VELOCITY MODEL



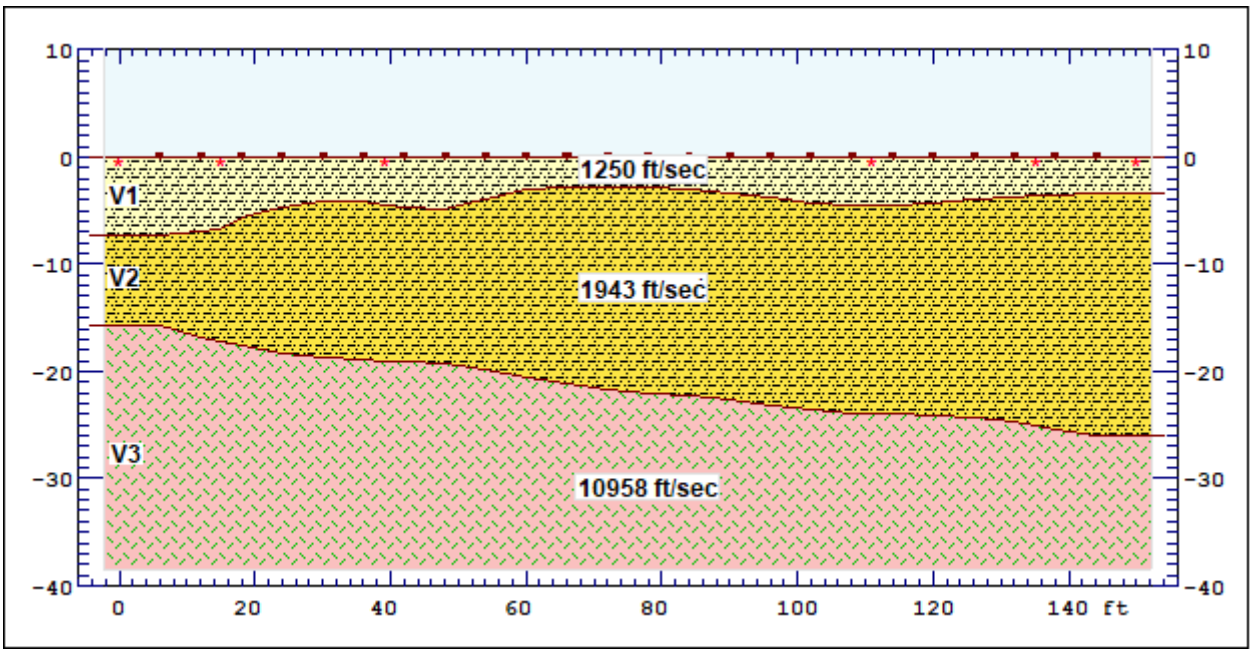
TIME-DISTANCE PLOT



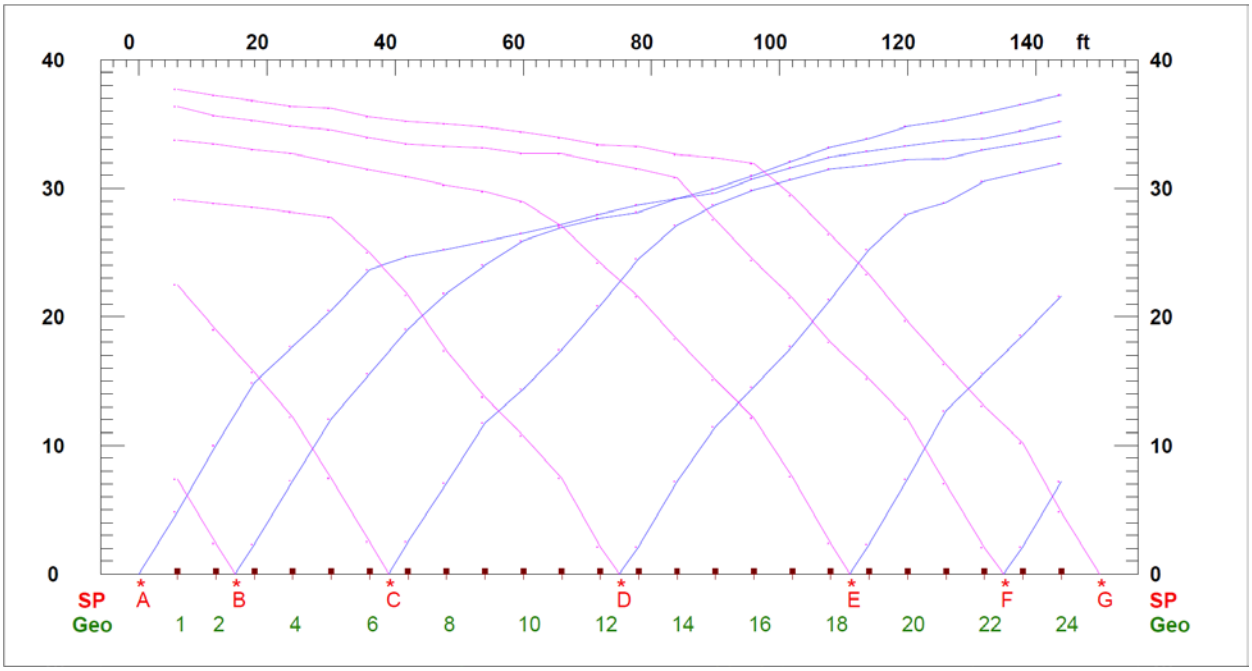
SEISMIC LINE S-1

< South - North >

LAYER VELOCITY MODEL



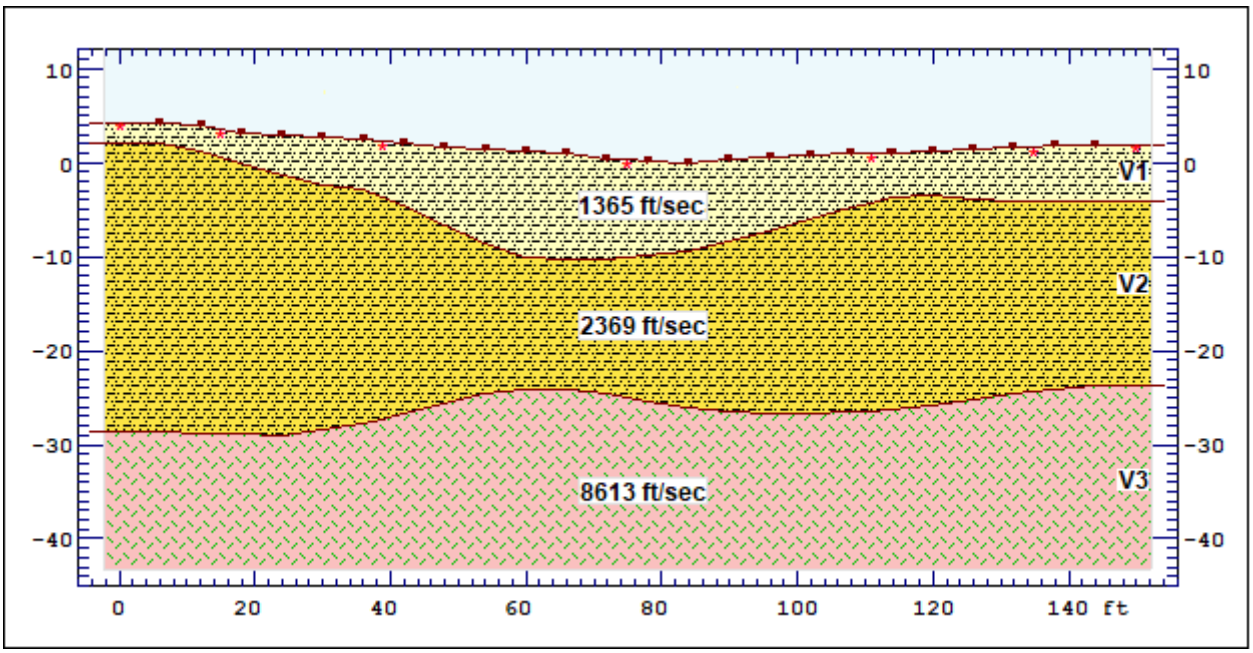
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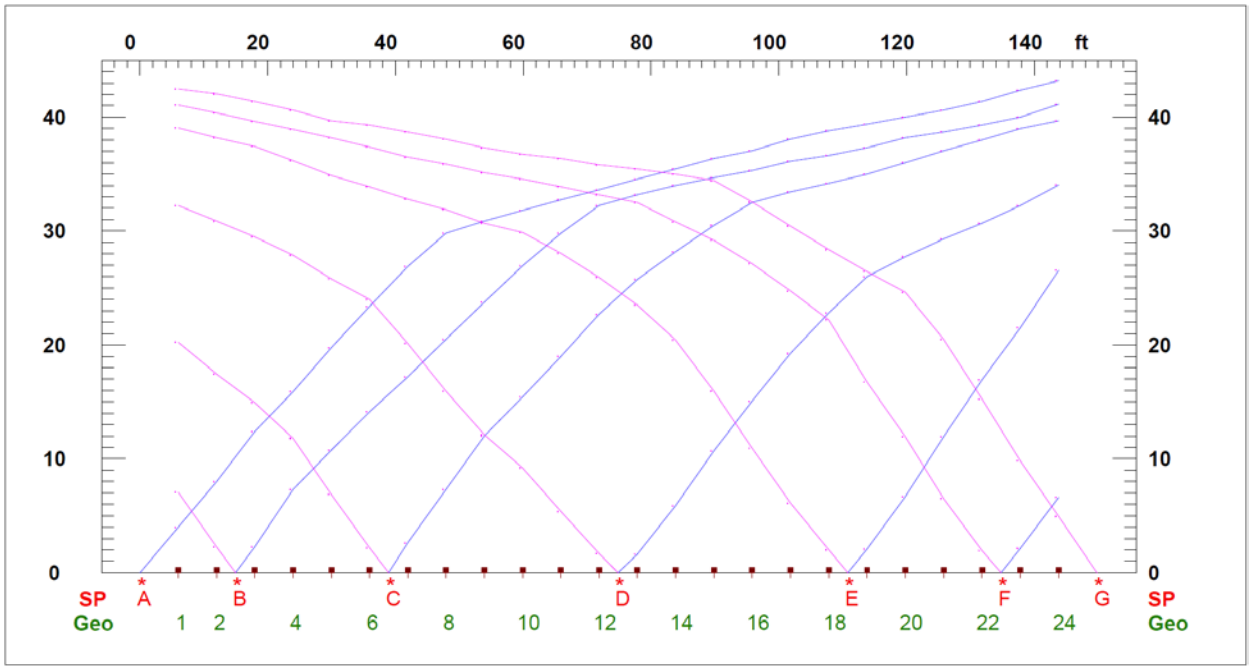
SEISMIC LINE S-2

North 53° East >

LAYER VELOCITY MODEL



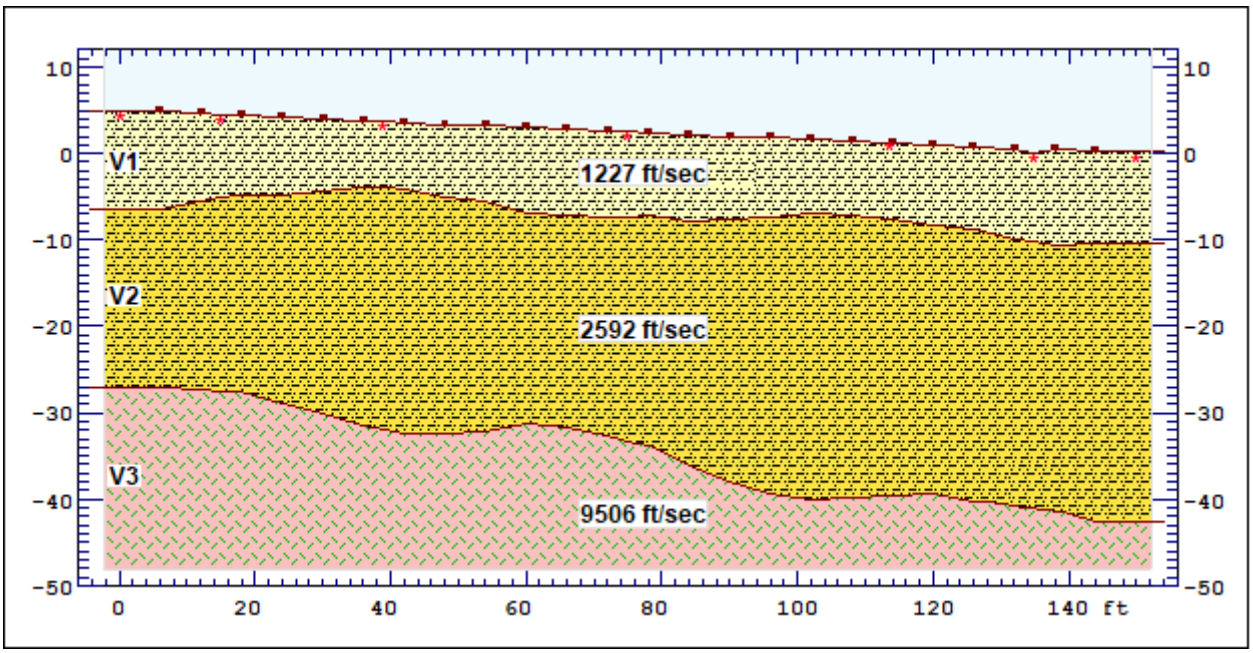
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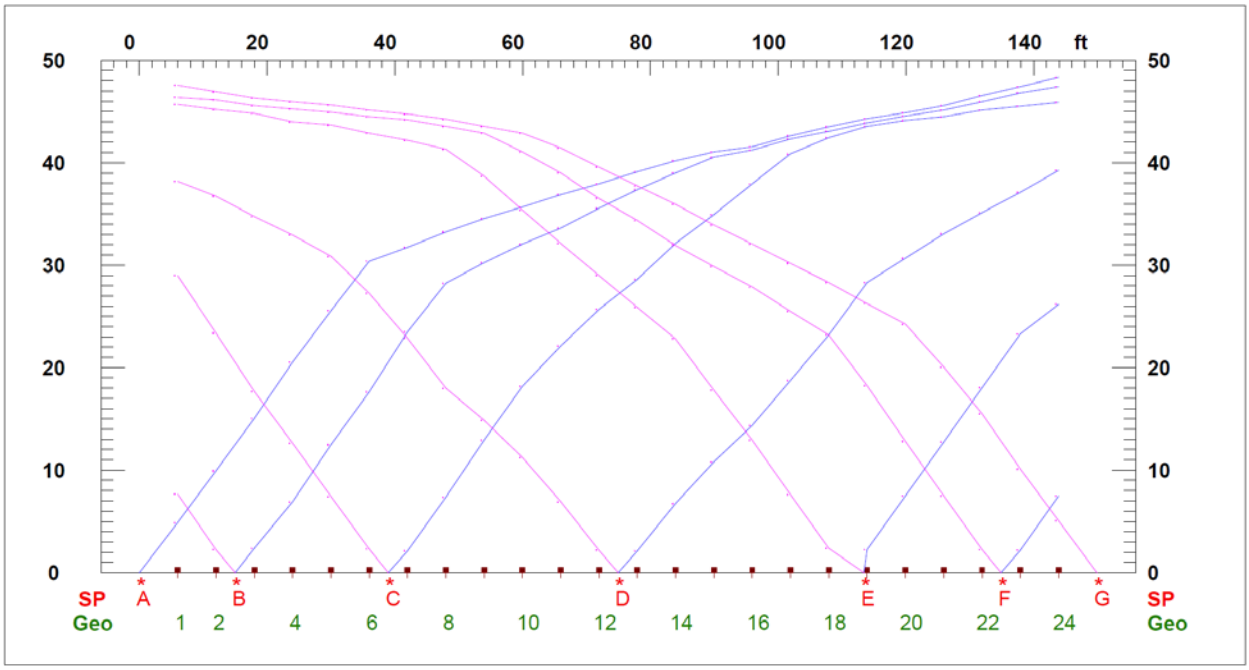
SEISMIC LINE S-3

< South - North >

LAYER VELOCITY MODEL



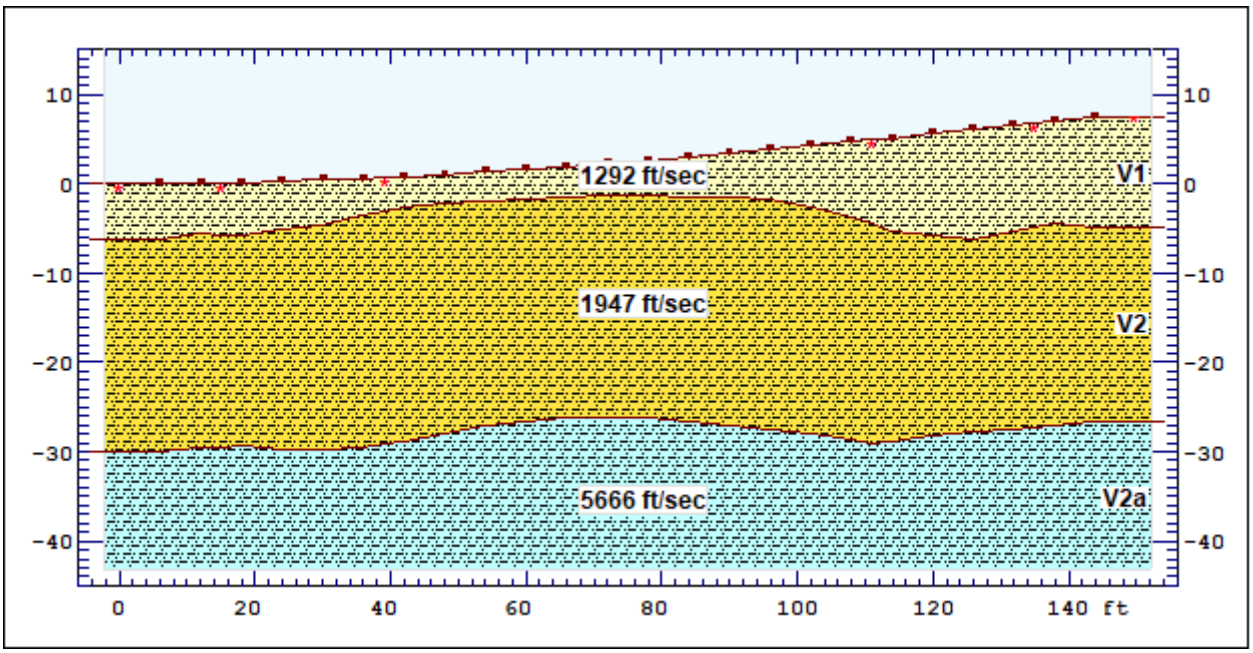
TIME-DISTANCE PLOT



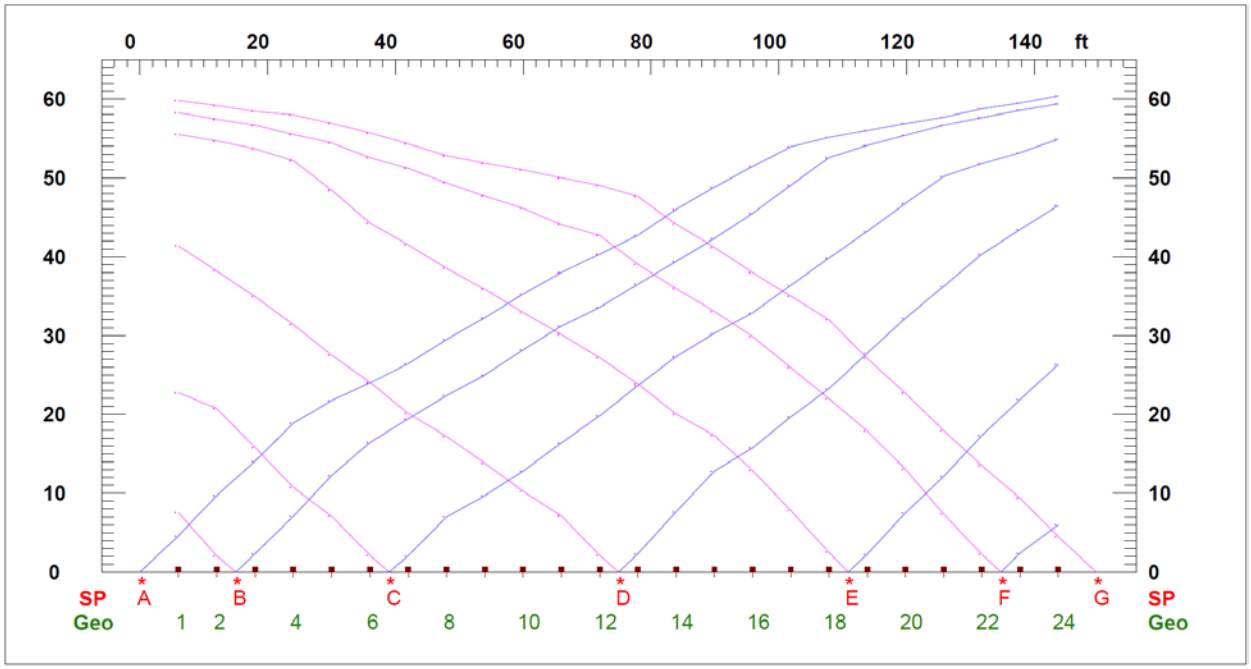
SEISMIC LINE S-4

< South - North >

LAYER VELOCITY MODEL



TIME-DISTANCE PLOT



APPENDIX B

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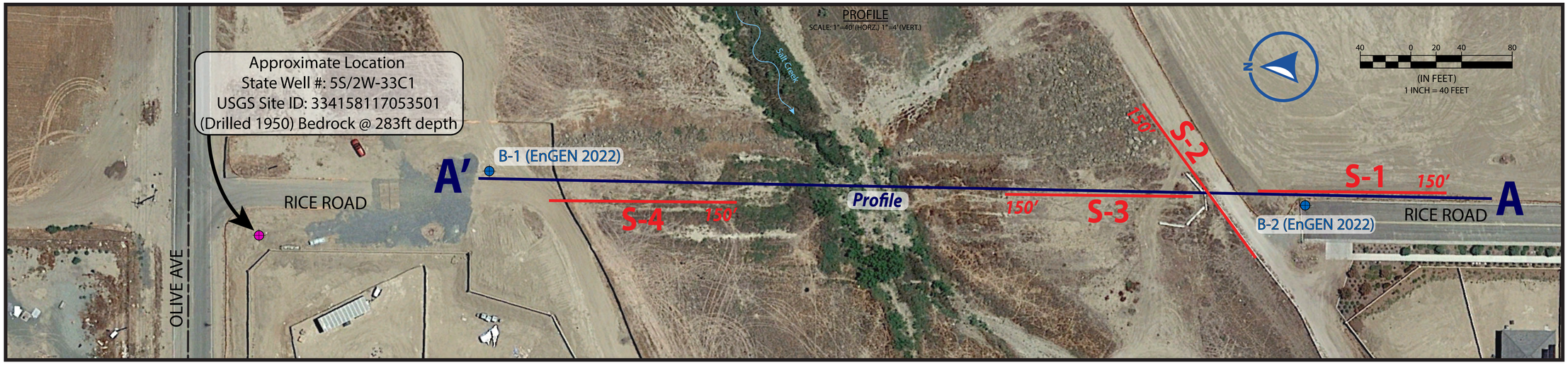
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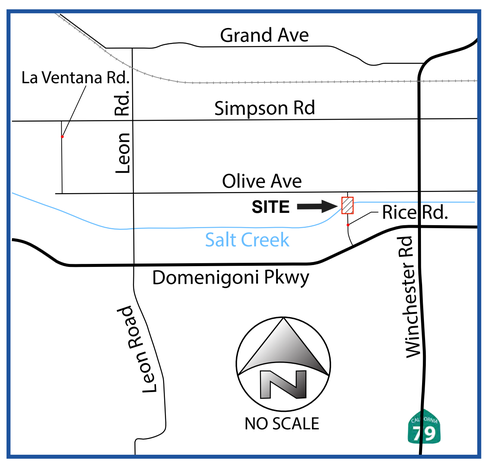
Scott, James H., 1973, Seismic Refraction Modeling by Computer, *in* Geophysics, Volume 38, No. 2, pp. 271-284.

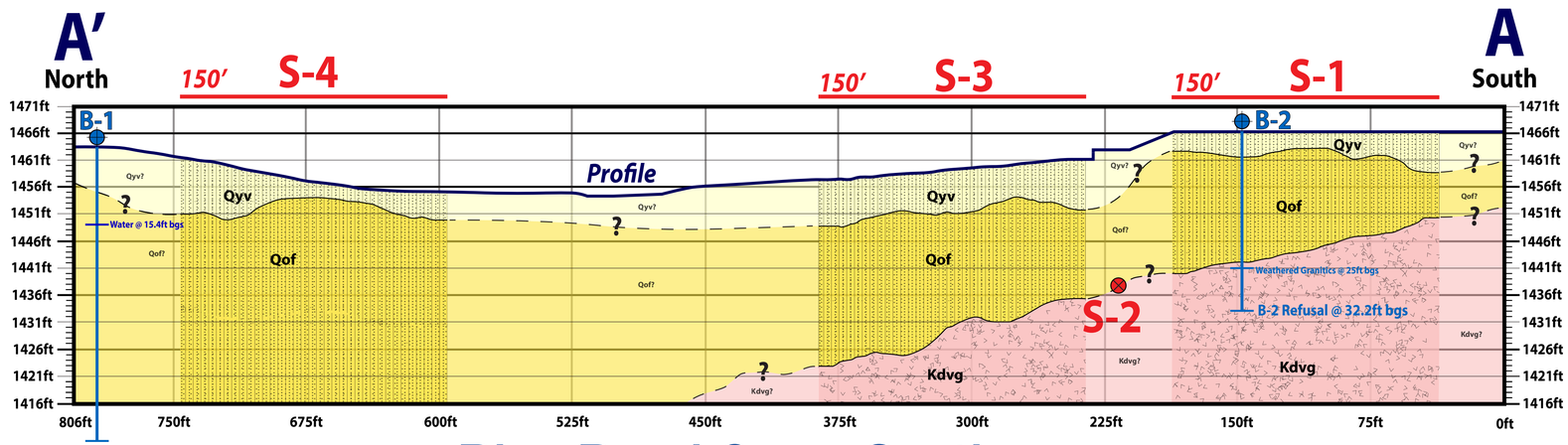
Appendix 5 - Appendix 6 – Cross Sections

Rice Road Cross Sections & Seismic Line Locations



Vicinity Map





Rice Road Cross Section

Legend

- Borings (EnGEN 2022)
- State Well Location (1950)
- Seismic Line Location (4/15/23)
- Elevation Profile

ENGEN CORPORATION
Geotechnical & Environmental Services

Geologic Units

Qyv — **Young alluvial valley deposits -** (Holocene and late Pleistocene) Fluvial deposits along valley floors. Unconsolidated sand, silt, and clay.

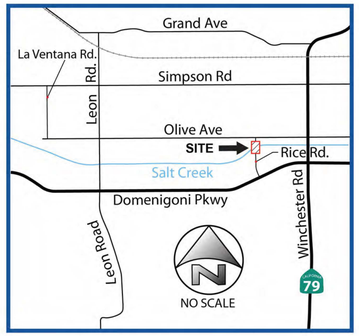
Qof — **Old alluvial fan deposits -** (late to middle Pleistocene) Reddish brown, gravel and sand alluvial fan deposits.

Kdvg — **Granodiorite of Domenigoni Valley -** (Cretaceous) Relatively uniform, massive to foliated hornblende biotite granodiorite.

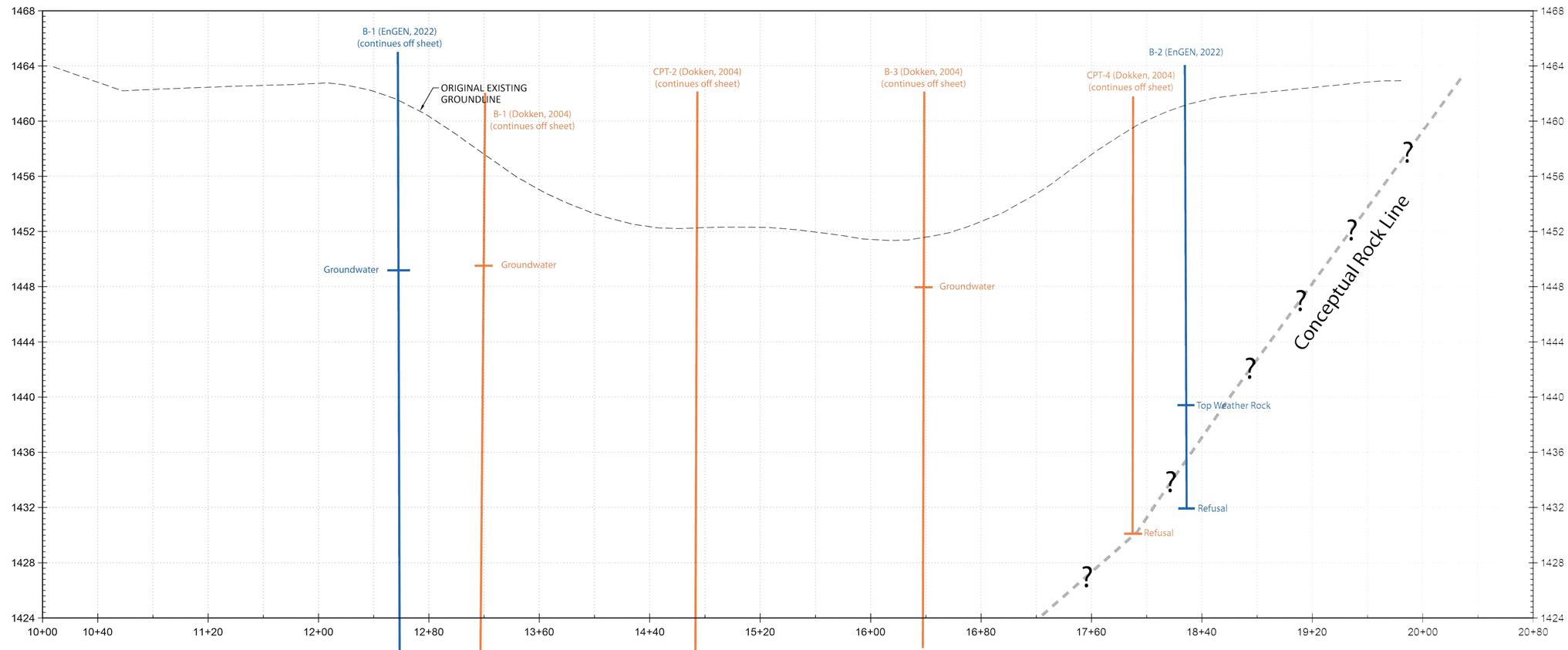
Rice Road Seismic Line Location Map

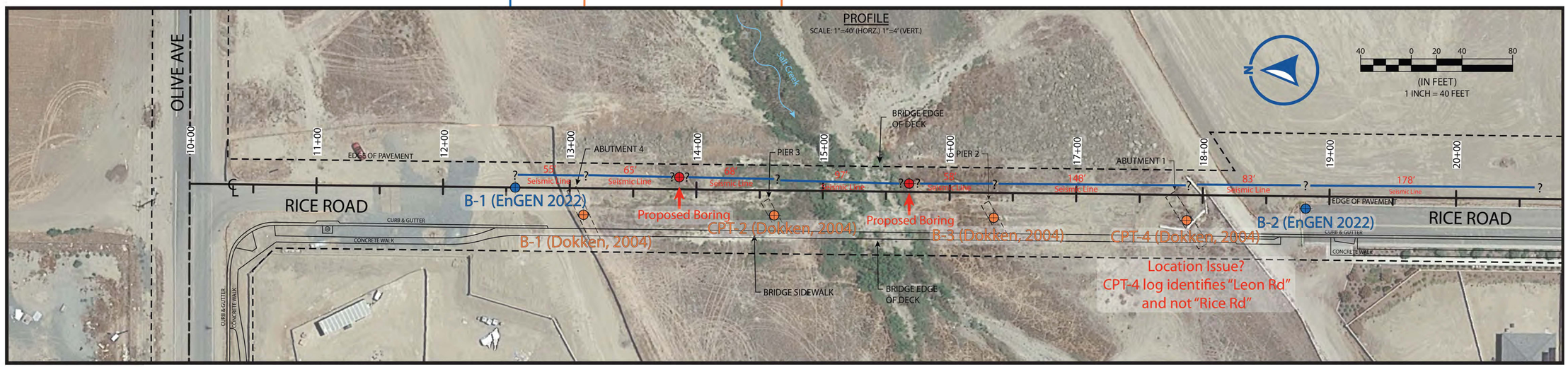
Project Name | Rice Road	Date |Apr 2023
Project No. | 4891GS	Client |Stantec/EMWD
Legal Desc. | Rice Road & Olive Ave	Plate No. | 1

Appendix 7 - Plate 1 - Geotechnical Study Site Plan



Vicinity Map





ENGEN CORPORATION
Geotechnical & Environmental Services

Legend

- Borings (Dokken, 2004)
- Borings (EnGEN 2022)
- Proposed Borings
- Proposed Seismic Line Location

Rice Road Boring Location Map

Project Name | Rice Road	Date |Feb 2023
Project No. | 4891GS	Client |Stantec/EMWD
Legal Desc. | Rice Road & Olive Ave	Plate No. | 1

APPENDIX E: PALEONTOLOGICAL RESOURCE ASSESSMENT

Rincon Consultants, Inc.
11801 Pierce Street, Suite 200
Riverside, California 92505
951-405-0979

October 14, 2025
Rincon Project No: 22-13623

Jennifer Ziv, Senior Project Manager
Woodard & Curran
2442 Avenida De La Carlota, Suite 180
Laguna Hills, California 92653
Via email: JZiv@woodardcurran.com

Subject: Eastern Municipal Water District Rice Road Pipeline Project, Riverside County California, Paleontological Resource Assessment

Dear Ms. Ziv:

Rincon Consultants, Inc. (Rincon) was retained by Woodard & Curran to conduct a paleontological resource assessment for the Eastern Municipal Water District Rice Road Pipeline Project (project) in Riverside County, California. The goals of this assessment are to identify the geologic units and paleontological sensitivity in the project site, assess potential for impacts to paleontological resources, and recommend mitigation measures to reduce impacts to scientifically significant paleontological resources, as necessary. The project is subject to the California Environmental Quality Act (CEQA), and the Eastern Municipal Water District (EMWD) is the lead CEQA agency.

This paleontological resource assessment consisted of a review of existing geologic maps, records search from the Western Science Center, and primary literature regarding geologic units within the project site and vicinity. Following the literature review, this report assessed the paleontological sensitivity of the geologic units underlying the project site and determined the potential for impacts to significant paleontological resources.

Project Site and Description

The project is in the community of Winchester in Riverside County, California. The project site along the alignment of Rice Road between Olive Avenue and Domenigoni Parkway, where it crosses Salt Creek, though Rice Road itself does not cross Salt Creek (Figure 1).

The project involves constructing 800 linear feet of new potable water pipeline along the Rice Road alignment and converting approximately 700 linear feet of an existing potable water pipeline to a recycled water pipeline. It would also involve new pipeline connections to existing potable water and recycled water pipelines. Additionally, approximately 70 linear feet of trenching will occur within the roadway of Olive Avenue near its intersection with Beeler Road that will reach 8 feet below the surface. Ground-disturbing activities anticipated for this project include open-cut trenching, microtunneling, and excavations for the microtunneling launch pit and receiving shaft. It is anticipated that these excavations will impact approximately 1,850 cubic yards of sediment. Additionally, dewatering during excavations may require drilling four to six wells from which groundwater would be pumped. These wells would reach approximately 40 feet deep and have a diameter of 24 inches.

Regulatory Setting

This study has been completed in accordance with the requirements of state environmental regulations, including the California Environmental Quality Act (CEQA).

Definition

Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows, etc.). Paleontological resources are not found in "soil" but are contained within the geologic deposits or bedrock that underlies the soil layer. Typically, fossils are greater than 5,000 years old (i.e., older than middle Holocene in age) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (Society of Vertebrate Paleontology [SVP] 2010). Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors. It is possible to evaluate the potential for geologic units to contain scientifically important paleontological resources and therefore evaluate the potential for impacts to those resources and provide mitigation for paleontological resources if they are discovered during construction of a development project.

State Regulations

California Environmental Quality Act

Paleontological resources are protected under CEQA, which states in part a project will "normally" have a significant effect on the environment if it, among other things, will disrupt or adversely affect a paleontological site except as part of a scientific study. Specifically, in Section VII(f) of Appendix G of the State CEQA Guidelines, the Environmental Checklist Form, the question is posed thus: "Will the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature." To determine the uniqueness of a given paleontological resource, it must first be identified or recovered (i.e., salvaged). Therefore, CEQA mandates mitigation of adverse impacts, to the extent practicable, to paleontological resources.

CEQA does not define "a unique paleontological resource or site." However, the Society of Vertebrate Paleontology (SVP) has defined a "significant paleontological resource" in the context of environmental review as follows:

Fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are typically to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years) (SVP 2010).

The loss of paleontological resources meeting the criteria outlined above (i.e., a significant paleontological resource) would be a significant impact under CEQA, and the CEQA lead agency is responsible for ensuring that impacts to paleontological resources are mitigated, where practicable, in compliance with CEQA and other applicable statutes.

California Public Resources Code

Section 5097.5 of the Public Resources Code states:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Here "public lands" means those owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with Public Resources Code Section 5097.5 for their own activities, including construction and maintenance, and for permit actions (e.g., encroachment permits) undertaken by others.

Methods

Rincon evaluated the paleontological sensitivity of the geologic units which underlie the project site using published geologic maps and primary literature. Rincon assigned a paleontological sensitivity to the geologic units underlying the project site. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units. The SVP (2010) has defined paleontological sensitivity and developed a system for assessing paleontological sensitivity, as discussed below.

Paleontological Resources Sensitivity

Paleontological sensitivity refers to the potential for a geologic unit to produce scientifically significant fossils. Direct impacts to paleontological resources occur when earthwork activities, such as grading or trenching, cut into the geologic deposits within which fossils are buried and physically destroy the fossils. Sensitivity is determined by rock type, history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey.

The SVP (2010) describes rock units as having high, low, undetermined, or no potential for containing significant nonrenewable paleontological resources. This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. Significant paleontological resources are fossils or assemblages of fossils, which are unique, unusual, rare, diagnostically, or stratigraphically important, and those which add to an existing body of knowledge in specific areas, stratigraphically, taxonomically, or regionally. While these standards were specifically written to protect vertebrate paleontological resources, all fields of paleontology have adopted these guidelines.

- **High Potential.** Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rock units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcaniclastic formations (e.g., ash or tephra), and some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e.g., middle Holocene and older, fine grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones, etc.). Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data. Rock units which contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and rock units which may contain new vertebrate deposits, traces, or trackways are also classified as having high potential.

- **Low Potential.** Reports in paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule, e.g., basalt flows or Recent colluvium. Rock units with low potential typically will not require impact mitigation measures to protect fossils.
- **No Potential.** Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection nor impact mitigation measures relative to paleontological resources.
- **Undetermined Potential.** Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist (see "definitions" section in this document) to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.

Geologic and Paleontological Setting

The project site is located in the Peninsular Ranges geomorphic province, one of the eleven geomorphic provinces of California (California Geological Survey 2002). In general, the Peninsular Ranges consist of northwest-southeast trending mountain ranges and faults (Norris and Webb 1976), which are comprised of Mesozoic to Cenozoic plutonic and extrusive igneous and Cretaceous marine sedimentary rocks. The Peninsular Ranges province also contains sedimentary basins such as the Los Angeles Basin which have accumulated thick sequences of Cenozoic marine and terrestrial sedimentary rocks. Specifically, the project site is located in the Perris Valley, which is part of the Perris Block, a geophysical block with low topographic relief which is bounded to the west by the Elsinore Fault Zone and to the east by the San Jacinto Fault Zone (Morton and Miller 2006).

The geology of the region surrounding the project site was mapped by Morton and Miller (2006), who identified three geologic units underlying the project site (Figure 2): Holocene alluvial valley deposits, Pleistocene alluvial fan deposits, and granodiorite and tonalite of the Domenigoni Valley.

Holocene Alluvial Valley Deposits

Holocene alluvial valley deposits underlie most of the project site, approximately between Olive Ave and 600 feet north of Western Hills Drive (Figure 2). Holocene alluvial valley deposits consist of unconsolidated sand, silt, and clay-bearing alluvium deposited in valleys (Morton and Miller 2006). Holocene sediments are typically considered too young (i.e., less than 5,000 years old) to preserve paleontological resources (SVP 2010). Therefore, Holocene alluvial deposits have low paleontological sensitivity.

Pleistocene Alluvial Fan Deposits

Pleistocene alluvial fan deposits are mapped in the southwestern corner of the project site (Figure 2). Pleistocene alluvial fan deposits consist of indurated and often dissected reddish-brown, gravel and sand (Morton and Miller 2006). Pleistocene sediments have produced many scientifically significant paleontological resources in Riverside County, which have yielded mastodon (*Mammut*), horse

(*Equus*), coyote (*Canis latrans*), rabbit (Leporidae), reptile, birds, and invertebrate fossils (Jefferson 2010; Paleobiology Database 2025, Stoneburg 2025). Given this fossil-producing history, Pleistocene alluvial fan deposits have high paleontological sensitivity.

Granodiorite and Tonalite of the Domenigoni Valley

Granodiorite and tonalite of the Domenigoni Valley underlies the south-eastern corner of the project site (Figure 2). This geologic unit represents the principal rock of the Domenigoni Valley Pluton formed in the Cretaceous (Morton and Miller 2006). Granodiorite and tonalite are intrusive igneous rocks meaning they form from the cooling of magma beneath the Earth's surface, which cannot preserve fossils (SVP 2010). Therefore, granodiorite and tonalite of the Domenigoni Valley is considered to have no paleontological sensitivity.

Subsurface Geology

Holocene-aged geologic units, such as Holocene alluvial valley deposits, are underlain by older, potentially high-sensitivity sediments in the subsurface. Pleistocene-aged alluvial sediments within Riverside County are known to preserve paleontological resources (Jefferson 2010; Paleobiology Database 2025; Stoneburg 2025) and have high paleontological sensitivity. Due to the proximity of the Holocene alluvial valley deposits to Pleistocene alluvial fan deposits (Figure 2), Pleistocene sediments could occur at depths as shallow as 5 feet. This assessment is supported by the County of Riverside's paleontological sensitivity model, which maps the project site as having a High B paleontological sensitivity meaning low paleontological sensitivity from 0 to 5 feet below the surface and high paleontological sensitivity at a depth of 5 feet or greater (County of Riverside 2015).

Paleontology of the Project Site

The paleontological records search of the Western Science Center recovered no known fossil localities within the project site (Stoneburg 2025). However, Stoneburg (2025) reported eight fossil localities from Pleistocene alluvial sediments within 1 mile of the project site. Seven of these localities lie along Salt Creek, and several dozen other localities lie along Salt Creek between 1 and 3.5 miles from the project site. The most common fossils from these localities are rodents and other small mammals, but camel (*Camelops*), horse (*Equus*), bird, reptile, amphibian, and invertebrate fossils have been found as well.

Findings and Recommendations

Ground-disturbing activities within previously undisturbed sediments with high paleontological sensitivity could result in significant impacts to paleontological resources under CEQA. Impacts would be significant if construction activities result in the destruction, damage, or loss of scientifically important paleontological resources and associated stratigraphic and paleontological data. Areas mapped as Pleistocene alluvial fan deposits have high paleontological sensitivity at any depth, and areas mapped as Holocene alluvial valley deposits have high paleontological sensitivity greater than 5 feet below the surface (Figure 2).

Open-cut trenching is anticipated to impact Pleistocene alluvial fan deposits and reach greater than 5 feet below the surface in areas mapped as Holocene alluvial valley deposits (Figure 1). Therefore, this activity has the potential to significantly impact paleontological resources. Excavations for the microtunneling launch pit and receiving shaft are anticipated to impact sediments greater than 5 feet below the surface in areas mapped as Holocene alluvial valley deposits and, therefore, also have the potential to significantly impact paleontological resources. Drilling for microtunneling and dewatering

wells are unlikely to produce spoils that may be monitored for significant paleontological resources. Therefore, these activities do not pose a risk to significantly impact paleontological resources.

The following mitigation actions would reduce the potential impacts to paleontological resources resulting from this project to a less-than-significant level:

Paleontological Resources Monitoring and Mitigation

Qualified Professional Paleontologist. Prior to excavation, EMWD shall retain a Qualified Professional Paleontologist, as defined by the Society of Vertebrate Paleontology (SVP 2010), who shall direct all mitigation measures related to paleontological resources.

Paleontological Worker Environmental Awareness Program. Prior to the start of construction, the Qualified Professional Paleontologist or their designee shall conduct a paleontological Worker Environmental Awareness Program (WEAP) training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction personnel.

Paleontological Monitoring and Salvage. Full-time paleontological monitoring shall be conducted during open-cut trenching and excavations within previously undisturbed sediments assigned high paleontological sensitivity (i.e., mapped as Pleistocene alluvial fan deposits or greater than 5 feet below the surface in areas mapped as Holocene alluvial valley deposits). Bulk matrix sampling (i.e., dry-screening) of sediments may be warranted to collect microfossils within these sediments. Paleontological monitoring shall be conducted by a paleontological monitor with experience with collection and salvage of paleontological resources and who meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor.

The Qualified Professional Paleontologist may recommend that monitoring be reduced in frequency or ceased entirely based on geologic observations. Such decisions shall be subject to review and approval by EMWD. In the event of a fossil discovery by the paleontological monitor or construction personnel, all construction activity within 50 feet of the find shall cease, and the Qualified Professional Paleontologist shall evaluate the find. If the fossil(s) is (are) not scientifically significant, then construction activity may resume. If it is determined that the fossil(s) is (are) scientifically significant, the following shall be completed:

- **Fossil Salvage.** The paleontological monitor shall salvage (excavate and recover) the fossil to protect it from damage/destruction. Typically, fossils can be safely salvaged quickly by a single paleontological monitor with minimal disruption to construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. Bulk matrix sampling may be necessary to recover small invertebrates or microvertebrates from within paleontologically sensitive deposits. After the fossil(s) is (are) salvaged, construction activity may resume.
- **Fossil Preparation and Curation.** Fossils shall be identified to the lowest (most-specific) possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Professional Paleontologist.

Final Paleontological Mitigation Report. Upon completion of ground-disturbing activities (or laboratory preparation and curation of fossils, if necessary), the Qualified Professional Paleontologist shall prepare a final report describing the results of the paleontological monitoring efforts. The report shall include a summary of the field and laboratory methods employed; an overview of project geology;

and, if fossils were discovered, an analysis of the fossils, including physical description, taxonomic identification, and scientific significance. The report shall be submitted to EMWD and, if fossil curation occurred, the designated scientific institution.

Sincerely,
Rincon Consultants, Inc.



Andrew McGrath, PhD
Paleontologist



Shannon Carmack
Principal

Attachments

Figure 1 Project Location
Figure 2 Geologic Map and Paleontological Sensitivity of the Project Site

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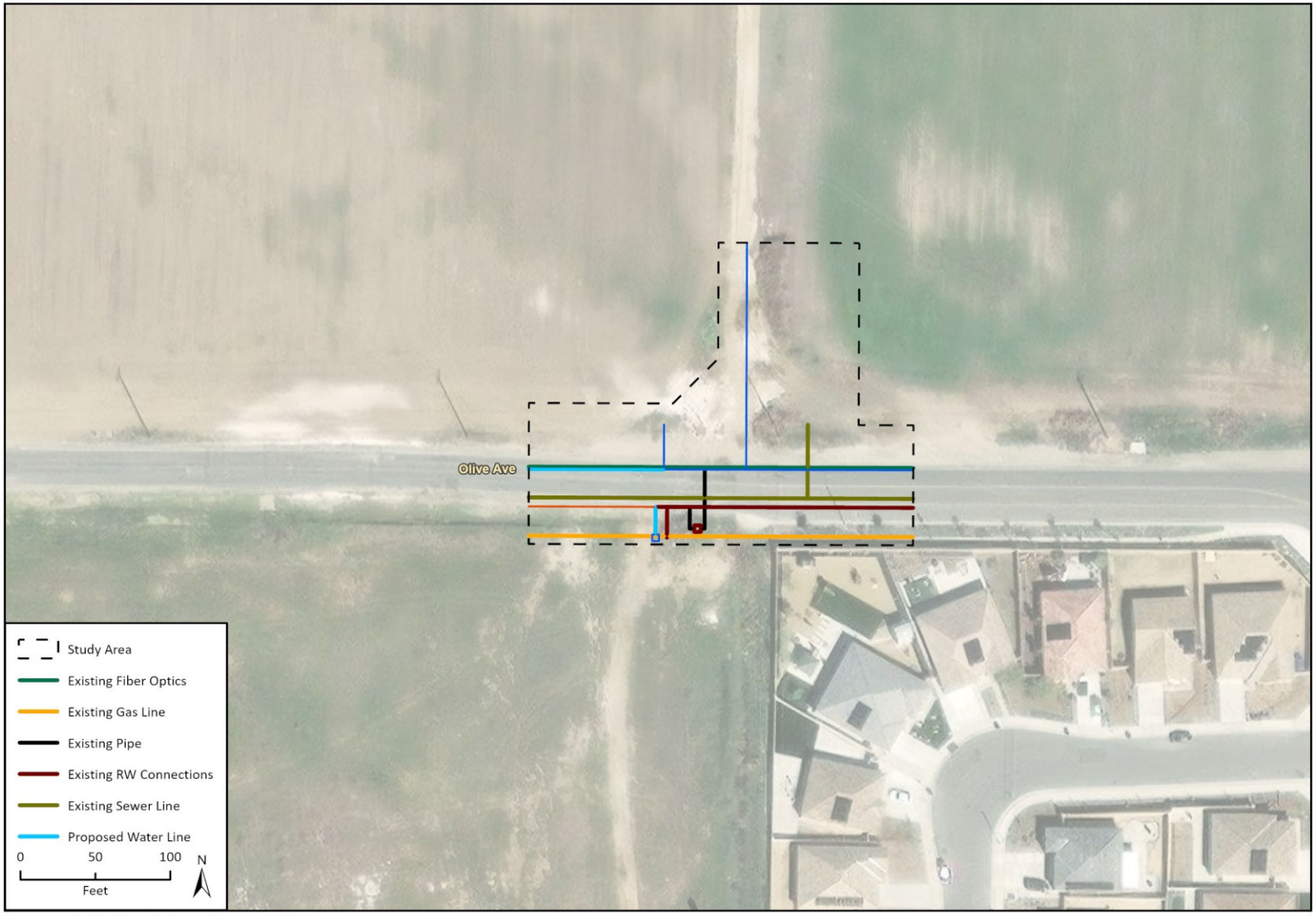
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Figures

Figure 1A Project Location



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Fig 2 Project Location

Figure 1B Project Location

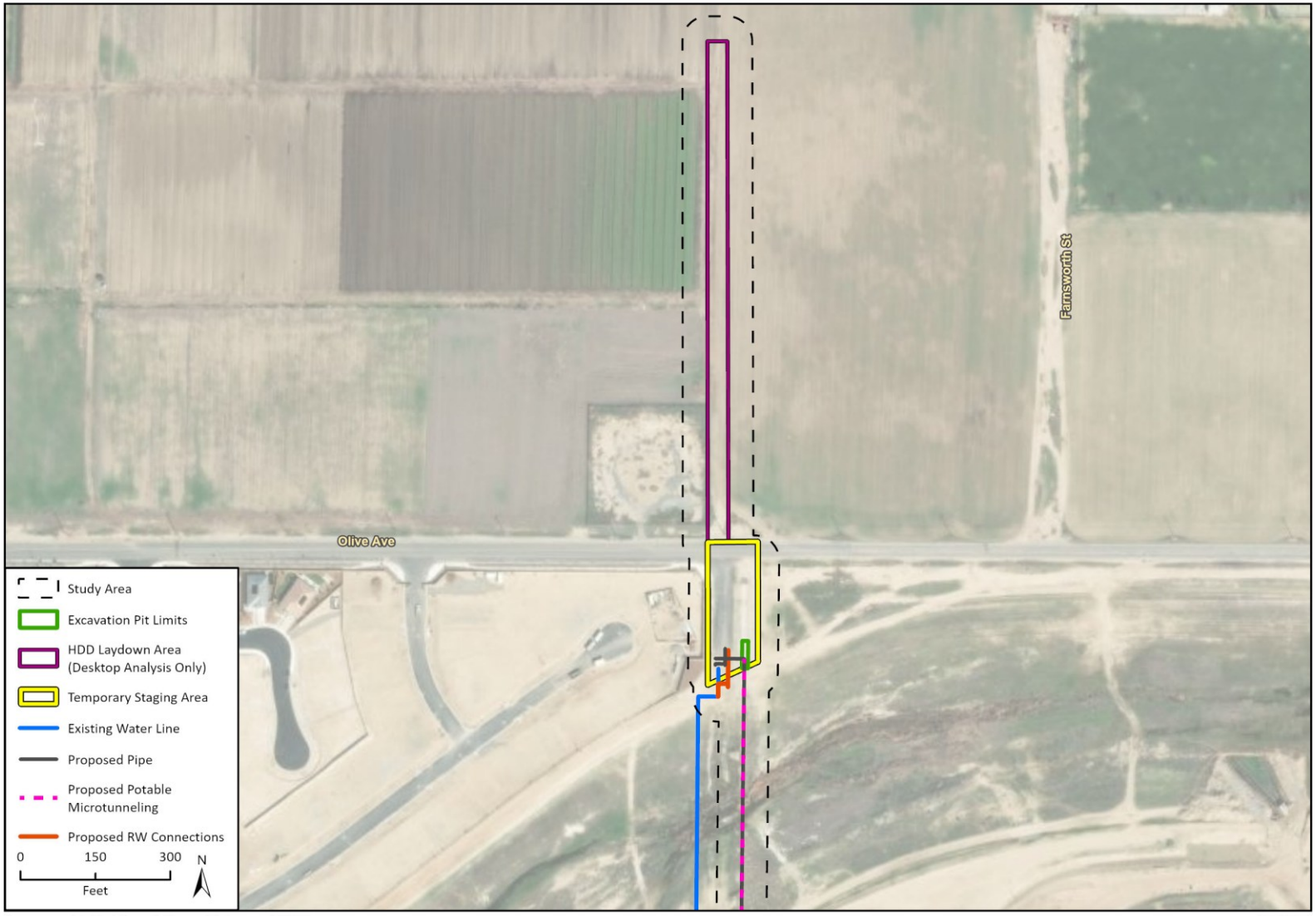


Figure 1C Project Location

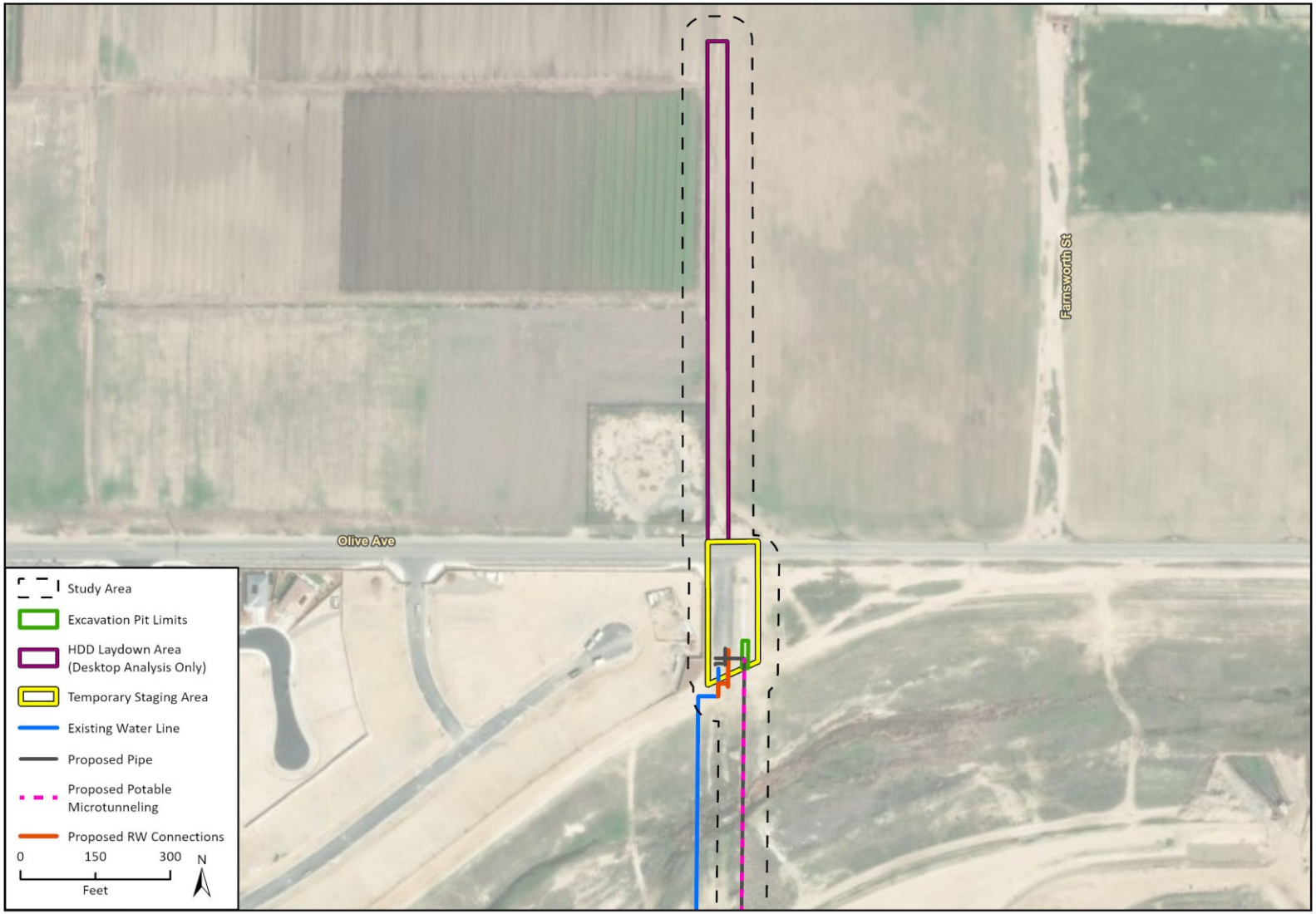
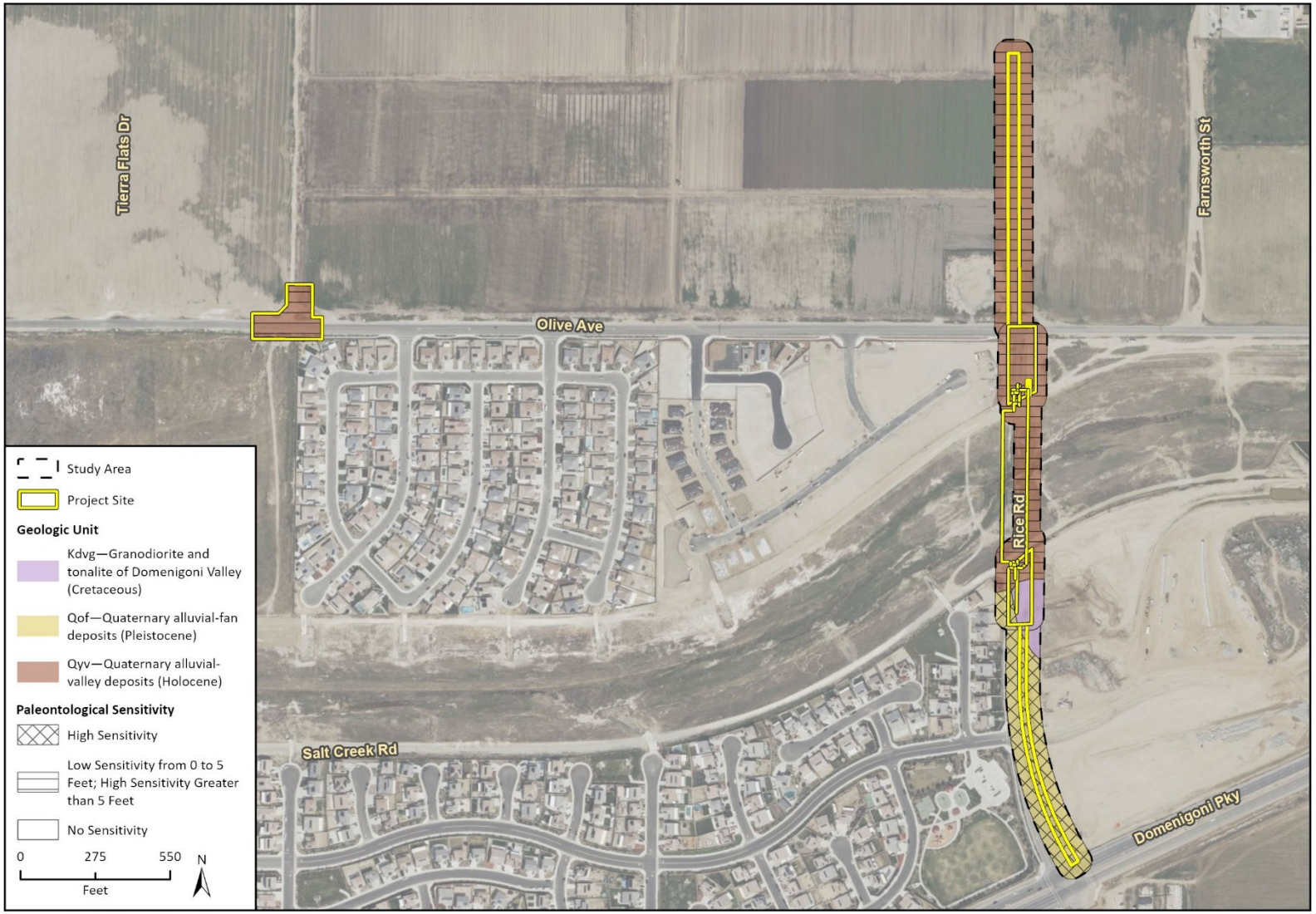


Figure 2 Geologic Map and Paleontological Sensitivity of the Project Site



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APPENDIX F: CONTINGENCY PLAN FOR INADVERTENT RELEASE OF NON-HAZARDOUS DRILLING FLUID

SAMPLE

Contingency Plan For
Inadvertent Release of Non-Hazardous Drilling Fluid

I. DRILLING FLUID PLAN

Essential to any successful HDD process is the selection and proper utilization of drilling fluid which is made up of primarily water and bentonite (de-hydrated clay) having pH values between 8 and10. Bentonite is a naturally occurring, non-toxic, inert substance that meets NSF/ANSI-60 Drinking Water Additive Standards and is frequently used for drilling potable water wells. Therefore, the ecological and environmental impacts of an inadvertent release of drilling fluid into a water body is a temporary increase in local turbidity until the drilling fluid dissipates with the water current or settles out.

Bentonite serves many notable purposes in the HDD process, which includes but is not limited to:

1) Cleans the drilled cuttings from the bore hole and cools the drilling tools,
2) Transports cuttings to the surface for recycling,
3) Aids in stabilizing formations by supplying a cohesive nature to the surrounding geological formation and preventing fluid loss from the bore hole,
4) Provides lubrication for the drill string and downhole assembly, which reduces friction forces at the formation,
5) Drives a down-hole drill motor for rock drilling,
6) Provides hydrostatic fluid pressure in the bore hole to offset ground formation pressures.

Drilling fluid is composed of a carrier fluid and solids. The selected carrier fluid for this crossing consists of water (approximately 96%) and an inorganic, bentonite clay (approximately 4%). The Contractor has access to several different brands of bentonite. The selection of which brand to use is typically based on price, availability and proximity to the proposed drill site. The following brands all have similar characteristics providing the same results as listed above.

ATTACHMENT **Potential Bentonite Brands - MSDS**

- Max Gel
- Super-Gel X
- Bara-Kade

The bentonite will be mixed in a mud mixing tank of up to 5,000 gallons, depending on mud rig size, in accordance with manufacturer's recommendation. Approximately 15 to 20 pounds of powder bentonite will be mixed with 100 gallons of water *(Mud Composition),* and will be used throughout the entire drilling process to establish and maintain optimum drilling fluid properties. The Contractor shall maintain fluid performance through the daily sampling, testing and recording of fluid properties during drilling operations. This provides the Contractor's Mud Technician the information to make educated recommendations regarding maintenance of efficient drilling fluid rheology consistent with hole-stabilization and the limiting of inadvertent surface returns. Following is one of the tables used as a guideline by the Mud Technician referencing recommended fluid

consistencies targeted during typical testing. Consistencies of powder and water are varied to achieve these recommended viscosities.

Targeted Drilling Fluid Viscosities Recommended	
Sand	60-80 Viscosity
Silt	50-70 Viscosity
Clay	40-50 Viscosity
Rock	60-80 Viscosity
Gravel	70-90 Viscosity

Once the drilling fluid is thoroughly mixed to an acceptable consistency, it is pumped from the mud tank to the back end of the drill rig. From here it is injected under high pressure through the drill stem at a rate of between 300 to 800 gpm to the apex of the drill head. The spent drill fluid with mixed cuttings maintains a return flow back along the annular space created between the drill stem and the formation wall. Drill fluid returns to the entry pit where it is pumped by a 6hp submersible pump to the fluid recycle and processing system.

The first phase of the fluid processing system displaces solid returns at the shakers. Heavy solids are sifted out by a shaker with screens and deposited into a containment pit, from where they will be transported by dump truck to a site for disposal. The scalped cuttings containing medium fines and re-useable drilling fluid are pumped to the next phase of processing, which takes place at the desilter/mud cleaning unit. The heavier cuttings are again processed out for disposal while the recycled drilling fluid is pumped back and re-used in the drilling process.

The need for additives is not anticipated; however, additives may be deemed necessary based on evaluations and recommendations made by the Mud Technician during drilling and hole-opening operations. If the need for drill fluid additives does arise, it is anticipated that one of the following additives may be required in order to maintain adequate fluid rheology down-hole:

ATTACHMENT - Potential Additives or Equal

Brand	Purpose	Environmental Effect If Spilled
Suspend-IT	Used in Rock Formation - Increase Gel Strength	Non-Toxic / Non-Hazardous
Drill_Terge	Used in Clay Formation – Prevents Clay Balling and Swelling	Non-Toxic / Non-Hazardous
InstaVis Plus	Used in Clay Formation – Improves Viscosity	Non-Toxic / Non-Hazardous
Rel-Pac Xtra Low	Used in Sand & Cobble - Control Fluid Loss	Non-Toxic / Non-Hazardous
Soda Ash	Increase Ph in Make-up Water	Non-Toxic / Non-Hazardous

II. PREVENTION - CONTAINMENT – COMMUNICATION - CONTROL

Prevention

Best management practices shall be utilized for spill prevention, containment and control. Containment of drilling fluids will be attained through various precautions implemented prior to positioning the major pieces of equipment on the proposed sites. Configuration considerations shall be made for site geology, topography, and storm water management and erosion control.

Preventative training is conducted periodically; The Contractor's personnel are required to undergo pre-construction training to discuss preemptive measures and early response procedures and techniques specific to this project as identified below. This training introduces personnel to the appropriate chain of communication leading up to suspending of drilling operations should that action become necessary.

The following topics will be addressed during the training session:

- Preventative Methods to Invoke Prior to and During Construction;
- Details of the Spill Plan and Inadvertent Return Contingency Plan;
- Environmental Protection;
- Mitigative Resources Available at the site for Environmental Protection;
- Site Specific Permit Conditions;
- Monitoring of HDD operations (Recognize the Potential Areas of Inadvertent Release/Spill);
- Chain of Authority and Responsibility;
- Chain of Communication;
- List of Contact names and phone numbers of governing agencies to be posted;
- Incidents that must be reported and the person to report them to,

The Contractor's drilling personnel shall be trained in the safe handling and use of drill fluids and materials associated with directional drilling. Every drill project has a designated supervisory person responsible for implementation and execution of environmental policy, safety monitoring and reports, and implementation of mitigation plans. The Project Supervisor shall be well-versed in the written procedures and policy maintained and is responsible for carrying them out.

Depending on the topography, the drill site is generally graded flat over an area the size and configuration of which will accommodate the drill rig and ancillary equipment. The grade of the work area aids in preventing rapid runoff and provides a safe and level work area. Grading may also be required at the drill exit location depending on the equipment required for the installation. Drilling fluid supplied for the project is stored on-site in an area of safe containment. Containment barriers are positioned at various pieces of drilling equipment in the unlikely event of a spill during re-fueling, lubrication or equipment operation. Consistent monitoring shall be employed by the Contractor's personnel during handling, storage and transportation of fuels and lubricating oils.

At the entrance site, a pit is excavated to the approximate dimensions of 6'L x 6'W x 4'D for containment and processing of drilling returns. The exit sump pit will also be excavated to the approximate dimensions of 20'L x 10'W x 5'D to contain drilling fluids for re-cycle and re-circulation into the mud system.

Prevention of accidental spills of drilling fluid during HDD operations in the following areas is accomplished by the following actions. The responsible person follows proper protocol and established procedures for their particular job assignment:

Area of Potential Spill	Personnel	Preventative Action
Mud Containment Pits: *Potential Overflow* - Located at excavated entry & exit areas.	**Driller**: Closely monitor fluid returns in the drill entry pit in view of the drill survey trailer to maintain appropriate levels.	**Response:** Contain Area. If fluid level becomes high, run pump continuously in pit until safe level is achieved. Add multiple pumps if required.
Hoses: *Possible Leaks* - At the connection between tanks & sump pumps.	**Mud Technician**: Inspects hose connections every day for leaks & wear, maintains a full stock of replacement parts in the supply trailer.	**Response:** Contain Area. Repair leaks and replace worn out hoses and parts.
Containment Tanks: *Potential Overflow or Leak* - Soil separation, cutting containment and solids control tanks.	**Mud Technician:** Continuously observes & controls fluid levels & flow from a birds-eye view located on top deck of mud mixing/soil separation rig.	**Response:** Contain Area. If solid control tanks reach overflow point, pump down to manageable level. May have to pump excess fluid/cuttings to vac truck or other storage tank. Maintain exterior valves.
Frac Tanks: *Potential Overflow or Leak* - At temporary holding tank for drill cuttings and fluids. At exterior valve location	**Mud Technician:** Continuously observe levels and flow from a birds-eye view located on top deck of mud mixing/soil separation rig.	**Response:** Contain Area. If solid control tanks reach overflow point, pump down to manageable level. May have to pump excess fluid/cuttings to vac truck or other storage tank. Maintain exterior valves.
Vac Trucks/Dump Trucks: *Possible Leak or Release*- At valve location or worn hose.	**Vac Truck Driver:** Maintain equipment in proper working order and follow specific guidelines in operation of vacuum and valves.	**Response:** Contain Area. If solid control tanks reach overflow point, pump down to manageable level. May have to pump excess fluid/cuttings to vac truck

Note: All drilling personnel are trained in awareness of surroundings for observing and mitigating potential problems with equipment in the effort to avoid spills.

Containment

One of the main components in the containment and control of surface discharge is early detection and quick response. The Contractor's Directional Drilling personnel shall follow an established monitoring procedure listed in the accompanying text, which will be invoked by the

Drilling Superintendent in the event drilling fluid is being noticeably lost from the bore-hole. Technology and mitigative efforts employed by the Contractor shall be the most current and accepted methods in the industry today (BACT). They shall take into account both personnel safety and preservation of the environment.

The Contractor shall use an environmentally safe drilling fluid and drilling techniques that are proven to minimize the potential for adverse impact due to installation by directional drilling. The only potentially negative impact that directional drilling could have on the environment would be the inadvertent loss of drilling fluid from the bore-hole and its subsequent migration into sensitive areas. Such losses generally occur due to extreme porosity of the subsurface strata combined with gravitational and frictional forces that become greater than the ability of the drill fluid to return uphole to the excavated entry/exit pit.

The use of drilling fluid is essential for successful completion of the drilled crossing; there is no alternative. Implementing the Contractor's Prevention, Containment and Control procedures will ensure that every effort will be made within the limitations of available construction technology to prevent or react to a spill or inadvertent loss of drilling fluid with full intention of minimizing adverse environmental impact.

Loss of drilling returns is a common occurrence during drilling operations. It does not necessarily indicate that the drilling fluid is being inadvertently released to the surface or impacting the environment.

Communication Plan (To be filled out on-site upon project start)
Project contacts are as follows:

Contacts	Phone No.	Affiliation
Drilling Contractor *On-Site Representative* TBD Ops Manager		
Drilling Contractor *On-Site Representative* TBD Drill Superintendent-HDD RIG#1		
Drilling Contractor *On-Site Representative* TBD Drill Superintendent-HDD RIG#2 (If Needed)		
Drilling Contractor *Off-Site Representative* TBD		

1. In case of emergency, the Contractor will notify the on-site inspector who will invoke the communication plan in the following manner: The representative chain of communication is as follows;

Contacts	Phone No.	Affiliation
After Hours Contact		

2. The Owner's Field Representative will contact the following Organizations as needed;

Contacts	Phone No.	Affiliation

Also, as applicable, the following agencies may be notified in the event this contingency plan is implemented: Regional Water Quality Control Board (RWQCB), US Army Corps of Engineers (ACOE), US Fish and Wildlife Service (USF&WS), and other entities as appropriate (local fire department, Highway Patrol, Rail Road, etc.)

Inadvertent Release Response & Control

The absence of an open bore-hole conduit or the presence of a major formation fracture can lead to partial and potentially total loss of drilling fluid circulation. While it is impossible to determine the precise nature of this type of fluid loss, it is possible to accurately monitor for it by watching for a significant difference between the rates the fluid is being pumped down-hole and the rate it returns to the surface. The drilling fluid pumping rate and the rate of drilling fluid return to the surface is constantly monitored by the driller while the drilling is progressing. The driller will know immediately if an unusually high volume of drilling fluid is being lost down-hole, depending on the ground conditions encountered in the crossing and taking into account the volume used to fill the bore-hole. Should the driller believe that circulation is being completely lost he will implement the following procedures:

1) Temporarily cease drilling operations, including pump shut down;
2) Dispatch experienced observers as required to monitor the area in the vicinity of the crossing, for inadvertent returns of drilling fluid at the surface or in the river;
3) Identify the position of the drill head in relation to the point of entry
4) Re-start the pump and stroke the bore-hole up and down in stroke lengths up to 30 feet up to 6 times but no fewer than 2 in an effort to size the bore-hole annulus and re-open the circulation pathway.

In addition, the thixotropic properties of the drilling fluid may be thickened within the guidelines set forth by the manufacturer to aid in re-establishing circulation as required depending on bore-

hole conditions. Observers will continuously monitor for inadvertent fluid returns as long as the pump remains on. Occasionally, based on the driller's discretion, it may be useful to increase the stroke length up to 90 feet or past the point at which he believes circulation was lost.

If circulation is re-established, drilling will proceed as usual and monitoring for inadvertent fluid will take place once again if the rate of drilling returns progressively decreases at the fluid entry pit. If circulation is not re-established, monitoring for inadvertent fluid returns to the ground surface and river will continue and drilling will proceed.

If the amount of inadvertent returns is not great enough to allow practical collection, the affected area will be diluted with fresh water and allowed to dry and dissipate naturally back into the earth. If the amount of returns exceeds that which can be suitably contained with hand placed containment barriers, small collection sumps (less than 3.8 cubic meters) will be used to pump fluid back to the solids control system.

When drilling fluid returns are observed to be continuously surfacing above ground at an accessible location the following procedure will be followed:

1) Immediately cease pumping of drilling fluid;

2) Contain the location such that the drilling fluid cannot migrate across the ground surface;
   Materials and equipment used for containment:
   - Straw Bales;
   - Silt Fence;
   - Check Dams;
   - Backhoe for Accessible Areas;
   - Shovels;
   - Portable Pumps;
   - 100 feet of Hose.

3) Excavate a small sump pit at the location and provide a means for the fluid to be returned to either the drilling operations or a disposal site (i.e. pump through hose or into tanker);

4) Notify on-site contractor supervisor and Owner representative as required by the communication plan;

5) Continue drilling operations, maintain the integrity of the containment measures, and monitor the fluid returns as required to ensure that no surface migration occurs;

6) Clean-up is carried out once inadvertent returns are contained/controlled;
   - Fluid pumped to a secure containment vessel;
   - Area is diluted with water;
   - Area is restored to original condition.

If inadvertent drilling fluid returns are observed to be surfacing above-ground at a location that is inaccessible, i.e. along the bed of a water body, or, into the water, the following procedures will be followed:

1) Ensure that all reasonable measures within the limitations of the technology have been taken to re-establish circulation;

2) Continue drilling with the minimum amount of drilling fluid required to penetrate the formation and successfully install the product line.

Typically lost circulation has the highest probability of occurring while the pilot hole is being drilled due to the smaller bore-hole annulus and the relatively large volume of solids being displaced and carried out in the drilling fluid. In the course of drilling the pilot hole, circulation will often be temporarily lost as the pilot bit is advanced through more permeable or less competent sections of the ground formation when fluid pressures are at a maximum. As the pilot bit advances beyond these sections of the bore-hole fluid pressure will fall and circulation within the bore-hole will naturally be re-established. Much of the fluid lost to the formation under the greater pressures will return back to the bore-hole as the pressures fall, in which case the drilling fluid is not likely to migrate to the surface or the river. It is also possible for the drilling fluid to leave the bore-hole and migrate in a direction other than the ground surface or the wetland, in which case it may never be observed even if circulation is lost for long periods of time.

It should be noted that frequently drill cuttings generated as a result of the drilling process will naturally bridge and subsequently seal fractures or voids as drilling progresses, thus providing another means of re-establishing circulation. This is especially likely during the reaming process as higher volumes of larger cuttings are typically generated. Therefore it is usually beneficial to proceed with the pilot hole even if circulation has not been re-established since it will likely be re-established at some point during the reaming process.

The use of an environmentally safe drilling fluid ensures that even in the unlikely event of fluid loss at sensitive areas, there will be no adverse environmental impact other than a temporary minor increase in turbidity until the drilling fluid dissipates. It is important to note that any temporary increase in turbidity as a result of inadvertent drilling fluid loss while directional drilling the crossing will be several orders of magnitude less than that of an open-cut crossing.