Initial Study/Mitigated Negative Declaration

Joint Transmission Main Pump Station Project

MAY 2022

Prepared for:

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
APE	area of potential effects
AQMP	Air Quality Management Plan
Basin	Aliso Creek Groundwater Basin
BMP	best management practice
C	Commercial use
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
Caltrans	The California Department of Transportation
CARB	California Air Resources Board
CC	Community Commercial use
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH4	methane
City	City of Laguna Woods
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO2e	CO2 equivalent
CRHR	California Register of Historical Resources
dB	decibel
dBA	A-weighted decibels
DPM	diesel particulate matter
EO	Executive Order
ETWD	El Toro Water District
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	global warming potential
HGL	Hydraulic Grade Line
ips	inches per second
IS	Initial Study
Joint Transmission Main Pump Station Project	proposed project
JTM	Joint Transmission Main
LACM	Natural History Museum of Los Angeles County
Leq	energy-averaged sound level measured
LST	localized significance threshold

Acronym/Abbreviation	Definition
MND	Mitigated Negative Declaration
MT	metric tons
N2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO2	nitrogen dioxide
NOx	oxides of nitrogen
O3	ozone
OC NCCP/HCP	Orange County Natural Community Conservation Plan/Habitat Conservation Plan
PM10	coarse particulate matter
PM2.5	fine particulate matter
PPV	peak particle velocity
PRC	Public Resources Code
R-1/R-2 Reservoir Site	project site
RCNM	Roadway Construction Noise Model
rms	root-mean-square
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SOx	sulfur oxides
TAC	toxic air contaminant
TCRs	Tribal Cultural Resources
USGS	U.S. Geological Survey
VdB	vibration velocity decibels
VOC	volatile organic compounds

1 Introduction

1.1 Project Overview

This Draft Initial Study (IS) was prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental effects associated with the Joint Transmission Main Pump Station Project (project or proposed project) proposed by El Toro Water District (ETWD) and located at the northwest corner of El Toro Road and Moulton Parkway in the City of Laguna Woods (City). The proposed project involves the installation of a new pump station and associated improvements at ETWD's existing R-1/R-2 Reservoir Site (project site). A detailed description of the proposed project and its location is provided in Section 2, Project Description.

1.2 California Environmental Quality Act Compliance

ETWD is the lead agency responsible for the preparation of the environmental documentation and for the approval of the project. Based on the findings of this Draft IS, ETWD has made the determination that a Mitigated Negative Declaration (MND) is the appropriate environmental document to be prepared in compliance with CEQA (Section 21000 et seq.).

This IS/MND has been prepared by ETWD and is in conformance with Section 15070(a) of the CEQA Guidelines (14 CCR 15000 et seq.) and with El Toro Water District's Local Guidelines for Implementing the California Environmental Quality Act (ETWD 2021). The purpose of the MND and the IS checklist is to determine any potentially significant impacts associated with the project and to incorporate mitigation measures into the project design, as necessary, to reduce or eliminate significant or potentially significant effects. As determined in this Draft IS/MND, there is no substantial evidence, in light of the whole record before the agency, that the project would have a significant effect on the environment.

1.3 Public Review Process

In accordance with CEQA, this IS/MND has been made available for public review to potentially affected agencies and individuals for a period of 20 days, in accordance with Section 15073 of the State CEQA Guidelines. During review of the IS/MND, affected public agencies and the interested public have an opportunity to focus on the document's adequacy in identifying and analyzing the potential environmental impacts and the ways in which the potentially significant effects of the project can be avoided or mitigated.

In reviewing this IS/MND, affected public agencies and the interested public should focus on the sufficiency of the document in identifying and analyzing the project's possible impacts on the environment. A copy of the Draft IS/MND and related documents are available for review at the El Toro Water District, 24251 Los Alisos Boulevard, Lake Forest, California 92630, between the hours of 7:30 a.m. and 4:00 p.m., Monday through Thursday, and 7:30 a.m. and 3:00 p.m. on alternate Fridays. It should be noted that ETWD is closed every other Friday. The document is also available on ETWD's website (https://etwd.com/doing-business/ceqa-documents/).

Comments on the MND may be made in writing before the end of the public review period. A 20-day review and comment period from May 17, 2022, to June 6, 2022, has been established in accordance with Section 15072(a) of the CEQA Guidelines. Following the close of the public comment period, ETWD will consider this Draft IS/MND and comments thereto in determining whether to approve the proposed project.

Written comments on the Draft IS/MND should be sent to the following address by 4:00 p.m., June 6, 2022.

Via Email:

Hannah Ford, P.E.
El Toro Water District
hford@etwd.com

Via Mail:

Hannah Ford, P.E.
El Toro Water District
24251 Los Alisos Boulevard
Lake Forest, California 92630

2 Project Description

2.1 Introduction

ETWD is proposing to construct a pump station and associated piping (proposed project) within its existing R-1/R-2 Reservoir Site within the City of Laguna Woods. The purpose of the project is to introduce a new source of water supply in the western portion of the El Toro Water District service area; this supply would offset the existing volume introduced in the northeastern side of El Toro Water District's service area and would not result in an increase in ETWD's capacity.

2.2 Project Location

The project site is located in southern Orange County, within the central area of the City of Laguna Woods (Figure 1, Project Location). The City occupies approximately 4 square miles, and is located approximately 5 miles inland from the coast, east of the Laguna Coast Wilderness Park, north of the City of Aliso Viejo, south of the City of Irvine, and south and west of the City of Laguna Hills. Regional access to the project area is via Interstate 5. While the proposed project would be located within a portion of the R-1/R-2 Reservoir Site, the entire project site is located on an approximately 2.9-acre parcel (Assessor Parcel Number 616-012-02), which is located at the northwest corner of El Toro Road and Moulton Parkway (Figure 2, Aerial Overview). ETWD owns and operates the property and existing facilities at this site.

2.3 Environmental Setting

Existing Facility

The project site is located on a hill that that slopes downward to the north from its elevated center. ETWD's existing facilities are located on a gated, flat area in the center of the site and consist of two reservoirs, two equipment buildings, and paved access areas (Figure 3, Existing Facility). Vehicular access is provided by a paved road off Moulton Parkway in the northern portion of the site.

Surrounding Location

The proposed project site is located within the City of Laguna Woods. Approximately 90% of the City of Laguna Woods consists of the gated Laguna Woods Village retirement community. The proposed project site is outside the gates of Laguna Woods Village and is surrounded by a self-storage facility and animal hospital to the north, City Centre Park to the west, a hotel to the south, and El Toro Road to the east (Figure 2, Aerial Overview). The proposed project site is largely not visible from the surrounding location due to the sloped hillside and ornamental vegetation that almost entirely surrounds it.

The project site and the surrounding areas are within the City of Laguna Woods, and are designated for Commercial uses (C) on the City's General Plan Land Use Map and are zoned for Community Commercial uses (CC) per the City's Zoning Map (City of Laguna Woods 2017a, 2017b) (Figure 4, General Plan Land Use Designation) (Figure 5, Zoning).

2.4 Project Characteristics

2.4.1 Project Description

The proposed project involves construction of a pump station that would connect to the existing Joint Transmission Main (JTM) on site. The pump station would be constructed within the central portion of the site adjacent to the R-2 reservoir, partially cut into the adjacent slope. The pump station may be located within a masonry block building or located underground with an overhead enclosure. To provide for a conservative evaluation of the project's potential impacts, this Draft IS/MND and its analysis assumes that the pump station would be constructed within the adjacent slope and located underground with an overhead enclosure, given that it would result in potentially greater impacts, such as noise emissions. Additionally, the precise layout of electrical equipment and piping is still under consideration. However, the improvements would be located within the approximately 0.5-acre area depicted in Figure 3.

Regardless of the ultimate site layout, the pump station would include one approximately 40-horsepower pump, new piping, an electrical service meter, a switchgear, and a motor control center. A conceptual site plan is provided in Figure 6, Site Plan.

Technical Background

Currently, the JTM cannot consistently serve the Gravity Zone due to the available hydraulic grade between the JTM and the existing R-1 and R-2 reservoirs. As such, imported water that is provided by the JTM is not considered useable to ETWD. The proposed project would provide the lift needed to allow the JTM to flow directly to the Gravity Zone, allowing ETWD to utilize the imported water provided through the JTM.

2.4.2 Project Construction and Scheduling

Construction of the proposed project would begin in June of 2022 and would last for 4 months. Table 2.4-1 provides information on the phasing and equipment which would be used during construction of the proposed project.

Table 2.4-1. Construction Scenario Assumptions

Phase	Start Date	Finish Date	On-Road Vehicles (Each Day)			Equipment (Each Day)		
			Workers	Vendor Trucks	Haul Trucks	Type	Quantity	Usage Hours
Mobilization	6/1/2022	6/6/2022	6	4	6	NA	NA	NA
Demolition	6/8/2022	6/13/2022	6	4	6	Rubber Tired Dozers	1	8
						Concrete/ Industrial Saws	2	8
						Tractor/ Loader/ Backhoe	1	8

Table 2.4-1. Construction Scenario Assumptions

Phase	Start Date	Finish Date	On-Road Vehicles (Each Day)			Equipment (Each Day)		
			Workers	Vendor Trucks	Haul Trucks	Type	Quantity	Usage Hours
Site Preparation	6/16/2022	6/28/2022	8	4	4	Tractor/ Loader/ Backhoe	2	8
						Rubber-Tired Dozers	2	8
Grading	7/1/2022	7/30/2022	12	4	22	Excavators	2	8
						Graders	2	8
						Tractor/ Loader/ Backhoe	3	8
Paving	8/1/2022	8/16/2022	12	4	4	Pavers	2	8
						Paving Equipment	2	8
						Rollers	2	8
Pump Station Construction	8/18/2022	9/30/2022	15	2	4	Crane	1	8
						Forklift	3	8
						Generators	1	8
						Tractor/ Loader/ Backhoe	3	8
						Welders	3	8
Architectural Coating	9/15/2022	9/30/2022	4	2	0	Air Compressor	1	8

Note: Additional detail provided in Appendix A.

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3 Initial Study Checklist

1. **Project title:**

   Joint Transmission Main Pump Station Project

2. **Lead agency name and address:**

   El Toro Water District
   24251 Los Alisos Boulevard
   Lake Forest, California 92630

3. **Contact person and phone number:**

   Hannah Ford
   hford@etwd.com
   949.837.7050 ext. 247

4. **Project location:**

   The project is located in the County of Orange, within the City of Laguna Woods. More specifically, the project site is located at the northwest corner of the intersection of El Toro Road and Moulton Parkway.

5. **Project sponsor's name and address:**

   El Toro Water District
   24251 Los Alisos Boulevard
   Lake Forest, California 92630

6. **General plan designation:**

   Commercial (C)

7. **Zoning:**

   Community Commercial (CC)

8. **Description of project:**

   The proposed project involves the installation of a new pump station and associated improvements at the existing ETWD R-1/R-2 Reservoir Site.

9. **Surrounding land uses and setting (Briefly describe the project's surroundings):**

   The project site and the surrounding areas are within the City of Laguna Woods and are designated for Commercial uses (C) on the City's General Plan Land Use Map and are zoned for Community Commercial uses (CC) per the City's Zoning Map.

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

    No outside public agency approvals are required.

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

    Please refer to Section 3.5, Cultural Resources, and 3.18, Tribal Cultural Resources, of this IS/MND.

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

Determination

On the basis of this initial evaluation:

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

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

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

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

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

Hannah Ford, P.E.
Engineering Manager

5/11/2022
Date

Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
    a. Earlier Analysis Used. Identify and state where they are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "Less Than Significant With Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
    a. The significance criteria or threshold, if any, used to evaluate each question; and
    b. The mitigation measure identified, if any, to reduce the impact to less than significance

3.1 Aesthetics

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

a) Would the project have a substantial adverse effect on a scenic vista?

No Impact. The proposed project involves the construction of a pump station within the center of the existing R-1/R-2 Reservoir Site. Due to the topography and vegetation within the pump station, the project would not be visible from surrounding streets and other areas. Moreover, the project site is not within a scenic vista, nor is it visible from a scenic vista within the City of Laguna Woods, City of Laguna Beach, or the City of Aliso Viejo. Therefore, the project would have no impact on scenic vistas.

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

No Impact. There are no officially designated scenic highways in the City of Laguna Woods, City of Laguna Beach, or the City of Aliso Viejo. According to the California Department of Transportation (Caltrans), the nearest eligible state scenic highway is the segment of State Route 1 (Pacific Coast Highway), located approximately 6 miles southwest of the project site in the City of Laguna Beach (Caltrans 2018). Due to the intervening environment and natural topography located between the project site and this eligible state scenic highway, development of the proposed project would occur outside the viewshed of this, and any other, designated scenic highway. Therefore, no impacts associated with state scenic highways would occur.

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

Less-Than-Significant Impact. California Public Resources Code (PRC) Section 21071 defines an "urbanized area" as "(a) an incorporated city that meets either of the following criteria: (1) Has a population of at least 100,000 persons, or (2) Has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons." As of 2020, the City has an estimated population of approximately 16,036 (DOF 2021). Thus, the project site is located in an urbanized area and the following analysis considers whether the project would conflict with applicable zoning or other regulations governing scenic quality.

The project site is zoned for community commercial uses, which includes civic and government uses as a permitted principal use within the district. The project would be considered a civic use; therefore, the project would be consistent with the applicable zoning regulations of the area (City of Laguna Woods 2021). Additionally, the project would involve the construction of a pump station within the center of the existing R-1/R-2 Reservoir Site and would not be visible from surrounding viewpoints due to the existing topography and landscaping of the site. Upon completion of construction, the project site would be similar in character to the existing conditions of the current facility. Therefore, with regard to degradation of the existing visual character or quality of the site, impacts would be less than significant.

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

No Impact. The project would involve the construction of a pump station within the center of the existing R-1/R-2 Reservoir Site. No lighting other than low-level security lighting is currently being proposed similar to the existing facility, therefore, no light or glare impacts would occur as a result of implementing the proposed project.

3.2 Agriculture and Forestry Resources

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
II.	**AGRICULTURE AND FORESTRY RESOURCES** – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

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

No Impact. Based on farmland maps prepared by the California Department of Conservation, the project site is not located in an area designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The site is designated as "Urban and Built-Up Land" (CDOC 2016). Therefore, no impacts associated with the conversion of Important Farmland would occur.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The Williamson Act, also known as the California Land Conservation Act of 1969 (California Government Code, Section 51200 et seq.), preserves agricultural and open space lands from the conservation to urban land uses by establishing a contract between local governments and private landowners to voluntarily restrict their land holdings to agricultural or open space use. The project site is not enrolled in a Williamson Act contract. Additionally, the project site and surrounding area are zoned for commercial land uses. As such, the project would not conflict with the existing zoning of agricultural use or with a Williamson Act contract, and no impacts would occur.

c) Would the project 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))?

No Impact. No forest land, timberland, or timberland zoned Timberland Production areas (as defined in California Resources Code Sections 12220(g), 4526, and 51104(g) are located within or adjacent to the project site. Therefore, the project would not conflict with existing zoning for forest land, timberland, or Timberland Production areas, and no impact would occur.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. As discussed in Section 3.2(c), no forest land or timberland are located within or adjacent to the project site. No forest land would be lost or converted to non-forest use as a result of the project, therefore, no impact would occur.

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

No Impact. Refer to Sections 3.2(a) and (c). The proposed project would not result in the conversion or farmland to non-agricultural use, nor would the proposed project be located within land considered to be forest land. Therefore, the project would not result in the conversion of farmland to non-agricultural use or the conversion of forestland to non-forest use and no impact would occur.

3.3 Air Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No 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?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less-Than-Significant Impact. The project site is located within the South Coast Air Basin (SCAB), which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties and all of Orange County, and is within the jurisdictional boundaries of the South Coast Air Quality Management District (SCAQMD).

SCAQMD administers SCAB's Air Quality Management Plan (AQMP), which is a comprehensive document outlining an air pollution control program for attaining the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). The most recently adopted AQMP for the SCAB is the 2016 AQMP (SCAQMD 2017).[1] The 2016 AQMP focuses on available, proven, and cost-effective alternatives to traditional air quality strategies while seeking to achieve multiple goals in partnership with other entities seeking to promote reductions in greenhouse gases (GHGs) and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017).

The purpose of a consistency finding with regard to the AQMP is to determine if a project is consistent with the assumptions and objectives of the 2016 AQMP and if it would interfere with the region's ability to comply with federal and state air quality standards. The SCAQMD has established criteria for determining consistency with the currently applicable AQMP in Chapter 12, Sections 12.2 and 12.3, of the SCAQMD CEQA Air Quality Handbook. These criteria are as follows (SCAQMD 1993):

- Consistency Criterion No. 1: Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.
- Consistency Criterion No. 2: Whether the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

[1] SCAQMD has initiated the development of the 2022 AQMP to address the attainment of the 2015 8-hour ozone standard (70 parts per billion) for the SCAB and the Coachella Valley. Preliminary rule development for the 2022 AQMP is expected to begin in July 2021, including control measures developed through Residential and Commercial Buildings and Mobile Source Working Groups.

To address the first criterion, project-generated criteria air pollutant emissions have been estimated and analyzed for significance and are addressed under Section 3.3(b). Detailed results of this analysis are included in Appendix A. As presented in Section 3.3(b), the proposed project would not generate construction or operational criteria air pollutant emissions that exceed the SCAQMD's thresholds, and the proposed project would therefore be consistent with Criterion No. 1.

The second criterion regarding the potential of the proposed project to exceed the assumptions in the AQMP or increments based on the year of project buildout and phase is primarily assessed by determining consistency between the proposed project's land use designations and its potential to generate population growth. In general, projects are considered consistent with, and not in conflict with or obstructing implementation of, the AQMP if the growth in socioeconomic factors is consistent with the underlying regional plans used to develop the AQMP (SCAQMD 1993). SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, and employment by industry) developed by the Southern California Association of Governments (SCAG) for its 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2016).[2] SCAQMD uses this document, which is based on general plans for cities and counties in the SCAB, to develop the AQMP emissions inventory (SCAQMD 2017). The SCAG RTP/SCS and associated Regional Growth Forecast are generally consistent with the local plans; therefore, the 2016 AQMP is generally consistent with local government plans.

As discussed in Section 3.11, Land Use and Planning, the proposed project would be consistent with the General Plan and zoning designation associated with the project site. Additionally, as the project does not include new commercial space or residences, no increase to population, housing, or permanent employment are anticipated as part of the project (see Section 3.14, Population and Housing). As such, since the proposed project is not anticipated to result in growth that would conflict with projections, it would not conflict with or exceed the assumptions in the 2016 AQMP. Accordingly, the project is consistent with the SCAG RTP/SCS forecasts used in development of the SCAQMD AQMP.

In summary, based on the considerations presented for the two criteria, impacts relating to the project's potential to conflict with, or obstruct implementation of, the applicable AQMP would be less than significant.

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

Less-Than-Significant Impact. A quantitative analysis was conducted to determine whether the proposed project might result in emissions of criteria air pollutants that may cause exceedances of the NAAQS or CAAQS or cumulatively contribute to existing nonattainment of ambient air quality standards. Criteria air pollutants include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide, particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), and lead. Pollutants that are evaluated herein include volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), which are important because they are precursors to O_3, as well as CO, sulfur oxides (SO_x), PM_{10}, and $PM_{2.5}$.

[2] SCAG has a more recently adopted RTP/SCS, the 2020–2045 RTP/SCS Connect SoCal Plan. However, the 2016 AQMP relies on land use and demographic data from the 2016–2040 RTP/SCS. Therefore, for the purpose of assessing consistency with the 2016 AQMP, land use information and demographic data from the 2016 RTP/SCS was utilized in this analysis.

Regarding NAAQS and CAAQS attainment status,[3] SCAB is designated as a nonattainment area for federal and state O_3 and $PM_{2.5}$ standards (CARB 2019a; EPA 2020). SCAB is also designated as a nonattainment area for state PM_{10} standards; however, it is designated as an attainment area for federal PM_{10} standards. SCAB is designated as an attainment area for federal and state CO and NO_2 standards, as well as for state sulfur dioxide standards. Although SCAB has been designated as nonattainment for the federal rolling 3-month average lead standard, it is designated attainment for the state lead standard.[4]

The proposed project would result in emissions of criteria air pollutants for which the California Air Resources Board (CARB) and U.S. Environmental Protection Agency have adopted ambient air quality standards (i.e., the NAAQS and CAAQS). Projects that emit these pollutants have the potential to cause, or contribute to, violations of these standards. The SCAQMD CEQA Air Quality Significance Thresholds set forth quantitative emission significance thresholds for criteria air pollutants, which, if exceeded, would indicate the potential for a project to contribute to violations of the NAAQS or CAAQS. Table 3.3-1 lists the SCAQMD Air Quality Significance Thresholds (SCAQMD 2019).

Table 3.3-1. South Coast Air Quality Management District Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Pollutant	**Construction (Pounds per Day)**	**Operation (Pounds per Day)**
VOCs	75	55
NO_x	100	55
CO	550	550
SO_x	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55
Lead[a]	3	3
TACs and Odor Thresholds		
TACs[b]	Maximum incremental cancer risk ≥10 in 1 million Cancer Burden >0.5 excess cancer cases (in areas ≥1 in 1 million) Chronic and acute hazard index ≥1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	

Source: SCAQMD 2019.
Notes: VOC = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; TAC = toxic air contaminant; SCAQMD = South Coast Air Quality Management District.
GHG emissions thresholds for industrial projects, as added in the March 2015 revision to the SCAQMD Air Quality Significance Thresholds, were not include included in this table as they are addressed within the GHG emissions analysis and not the air quality analysis.

[a] The phase out of leaded gasoline started in 1976. Since gasoline no longer contains lead, the project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

[b] TACs include carcinogens and noncarcinogens

[3] An area is designated as in attainment when it is in compliance with the NAAQS and/or the CAAQS. These standards for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare are set by the U.S. Environmental Protection Agency and CARB, respectively. Attainment = meets the standards; attainment/maintenance = achieves the standards after a nonattainment designation; nonattainment = does not meet the standards.

[4] Re-designation of the lead NAAQS designation to attainment for the Los Angeles County portion of the SCAB is expected based on current monitoring data. The phase-out of leaded gasoline started in 1976. Since gasoline no longer contains lead, the project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

The proposed project would result in a cumulatively considerable net increase for O_3, which is a nonattainment pollutant, if the project's construction or operational emissions would exceed the SCAQMD VOC or NO_x thresholds shown in Table 3.3-1. These emission-based thresholds for O_3 precursors are intended to serve as a surrogate for an O_3 significance threshold (i.e., the potential for adverse O_3 impacts to occur) because O_3 itself is not emitted directly, and the effects of an individual project's emissions of O_3 precursors (i.e., VOCs and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods. The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to estimate emissions from construction and operation of the proposed project.

Construction Emissions

Construction of the proposed project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (e.g., off-road construction equipment, soil disturbance, and VOC off-gassing from architectural coatings and asphalt pavement application) and off-site sources (e.g., vendor trucks, and worker vehicle trips). Specifically, entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. Internal combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$. Construction emissions can vary substantially from day to day depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions

Emissions from the construction phase of the proposed project were estimated using CalEEMod default values. To conservatively estimate project emissions, construction was modeled beginning in June 2022 and concluding in October 2022 and lasting approximately 4 months. (In practice, construction may begin at a later date. However, using an earlier start date for construction represents more conservative/worst-case scenario construction impacts, because standards for in-use off-road equipment and heavy-duty trucks become more stringent over time. As such, a later start date would result in similar or slightly reduced emissions relative to those that are shown herein for the June 2022 start date.) The analysis contained herein is based on the following schedule assumptions (duration of phases is approximate):

- Mobilization: 1 week (June 2022)
- Demolition: 1 week (June 2022)
- Site Preparation: 2 weeks (June 2022)
- Grading: 1 month (July 2022)
- Paving: 2 weeks (August 2022)
- Building Construction: 1.5 months (August 2022– September 2022)
- Application of architectural coatings: 2 weeks (September 2022)

Construction modeling assumptions for equipment and vehicles are provided in Table 2.4-1. The equipment mix and construction schedule were provided by the project applicant, and CalEEMod defaults were used for equipment horsepower and load factor. The site would be balanced during the grading phase. For the analysis, it was generally assumed that heavy-duty construction equipment would be operating at the site 5 days per week.

Emissions generated during construction (and operation) of the proposed project are subject to the rules and regulations of SCAQMD. Rule 403, Fugitive Dust, requires the implementation of measures to control

the emission of visible fugitive/nuisance dust, such as wetting soils that would be disturbed. It was assumed that active areas of the site would be watered at least two times daily, resulting in an approximately 55% reduction of fugitive dust (CalEEMod default value), to represent compliance with SCAQMD standard dust control measures in Rule 403. The application of architectural coatings, such as paint and other finishes, and the application of the concrete foundation would also produce VOC emissions; however, the contractor is required to procure architectural coatings that comply with the requirements of SCAQMD's Rule 1113, Architectural Coatings.

Table 3.3-2 shows the estimated maximum daily construction emissions associated with the construction phase of the proposed project.

Table 3.3-2. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds Per Day					
2022	2.67	21.37	23.48	0.04	1.32	1.09
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	No	No	No	No	No	No

Source: Appendix A.
Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
1. The values shown are the maximum summer or winter daily emissions results from CalEEMod. These estimates reflect control of fugitive dust required by SCAQMD Rule 403, specifically, watering of active site areas three times per day.

As shown in Table 3.3-2, daily construction emissions would not exceed the SCAQMD significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ during project construction, and short-term construction impacts would be less than significant.

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and the SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are used to determine whether a project's individual emissions would have a cumulatively considerable contribution to air quality. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD 2003a). As previously discussed, SCAB has been designated as a federal nonattainment area for O_3 and $PM_{2.5}$ and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. However, as indicated in Table 3.3-2, project-generated emissions would not exceed the SCAQMD emission-based significance thresholds for VOCs, NO_x, PM_{10}, or $PM_{2.5}$.

Cumulative localized impacts would potentially occur if construction of the proposed project were to occur concurrently with construction of another off-site project. Construction of other nearby projects could potentially overlap with construction of the proposed project. However, potential impacts associated with two or more simultaneous projects would be considered speculative.[5] Additionally, future projects in the vicinity would be (or have already been) subject to CEQA and would require air quality analysis and, where

[5] The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145).

necessary, mitigation. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all sites in the SCAQMD.

Based on the preceding considerations, the proposed project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and impacts would be less than significant during construction and operation.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less-Than-Significant Impact.

Localized Significance Threshold Analysis

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to SCAQMD, sensitive receptors include sites such as residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). For the purposes of the air quality analysis, the nearest sensitive receptors are considered to be the City Centre park located approximately 120 feet to the northwest of the project site.

Project construction activities would result in temporary sources of on-site criteria air pollutant emissions associated with off-road equipment exhaust and fugitive dust generation. According to the Final Localized Significance Threshold Methodology, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD 2009). Therefore, off site emissions from mobile emissions were excluded from the localized significance threshold (LST) analysis. The maximum daily on-site emissions generated by construction of the project in each construction year are presented in Table 3.3-3 and compared to the SCAQMD localized significance criteria for Source-Receptor Area 20 to determine whether the proposed project-generated on-site emissions would result in potential LST impacts.

Table 3.3-3. Construction Localized Significance Thresholds Analysis

Project	NO_2	CO	PM_{10}	$PM_{2.5}$
	Pounds per Day (On Site)			
2022	21.16	22.77	1.60	1.08
SCAQMD LST Criteria[a]	*92*	*647*	*4*	*3*
Threshold Exceeded?	**No**	**No**	**No**	**No**

Source: SCAQMD 2009; Appendix A.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = particulate matter with a diameter less than or equal to 10 microns (coarse particulate matter); $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns (fine particulate matter); SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold.
[a] LST are shown for a 1-acre disturbed area corresponding to a distance to a sensitive receptor of 25 meters in Source-Receptor Area 20 (Central Orange County Costal).

As shown in Table 3.3-3, the proposed project's construction activities would not generate emissions that exceed LSTs. Therefore, localized construction related impacts would be less than significant.

Health Effects of Carbon Monoxide

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed "CO hotspots." The transport of CO is extremely limited, as it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting sensitive receptors. Typically, high CO concentrations are associated with severely congested intersections. Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would contribute to adverse conditions at a signalized intersection that would potentially subject sensitive receptors to CO hotspots. The proposed project would not generate additional vehicle trips after construction; therefore, traffic congestion would not be substantially altered or affected by the project.

In addition, at the time that the SCAQMD Handbook (1993) was published, the SCAB was designated nonattainment under the CAAQS and NAAQS for CO. In 2007, the SCAQMD was designated in attainment for CO under both the CAAQS and NAAQS as a result of the steady decline in CO concentrations in the SCAB due to turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities. SCAQMD conducted CO modeling for the 2003 AQMP[6] (SCAQMD 2003b) for the four worst-case intersections in the SCAB: (1) Wilshire Boulevard and Veteran Avenue, (2) Sunset Boulevard and Highland Avenue, (3) La Cienega Boulevard and Century Boulevard, and (4) Long Beach Boulevard and Imperial Highway. At the time the 2003 AQMP was prepared, the intersection of Wilshire Boulevard and Veteran Avenue was the most congested intersection in Los Angeles County, with an average daily traffic volume of about 100,000 vehicles per day. The 2003 AQMP projected 8-hour CO concentrations at these four intersections for 1997 and from 2002 through 2005. From years 2002 through 2005, the maximum 8-hour CO concentration was 3.8 parts per million at the Sunset Boulevard and Highland Avenue intersection in 2002 and the maximum 8-hour CO concentration was 3.4 parts per million at the Wilshire Boulevard and Veteran Avenue in 2002.

Accordingly, CO concentrations at congested intersections would not exceed the 1-hour or 8-hour CO CAAQS unless projected daily traffic would be at least over 100,000 vehicles per day. Because the project is not anticipated to increase daily traffic volumes at any intersections, a CO hotspot is not anticipated to occur.

Based on these considerations, the project would not generate traffic that would contribute to congestion that may result in the formation of CO hotspots. In addition, due to continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing. Based on these considerations, the project would result in a less-than-significant impact to air quality with regard to potential CO hotspots.

Health Effects of Toxic Air Contaminants

In addition to impacts from criteria pollutants, impacts may include emissions of pollutants identified by the state and federal government as TACs or hazardous air pollutants. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state has formally identified

[6] SCAQMD's CO hotspot modeling guidance has not changed since 2003.

more than 200 substances as TACs, including the federal hazardous air pollutants, and is adopting appropriate control measures for sources of these TACs.

The following air toxic control measures are required by state law to reduce diesel particulate matter (DPM) emissions (DPMs are considered TACs):

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-Use Off-road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, Section 2449), the purpose of which is to reduce DPM and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, Section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading is required to be limited to 5 minutes; electric auxiliary power units should be used whenever possible.

"Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 30-year exposure period would contract cancer based on the use of standard Office of Environmental Health Hazard Assessment risk-assessment methodology (OEHHA 2015). In addition, some TACs have non-carcinogenic effects. The greatest potential for TAC emissions during construction would be DPM emissions from heavy equipment operations and heavy-duty trucks during construction of the project and the associated health impacts to sensitive receptors.

Diesel particulate matter emissions would be emitted from heavy equipment operations and heavy-duty trucks. Heavy-duty construction equipment is subject to a CARB Airborne Toxics Control Measure for in-use diesel construction equipment to reduce diesel particulate emissions. As described for the LST analysis, PM_{10} (representative of diesel particulate matter) exposure would not exceed the SCAQMD's threshold. According to the Office of Environmental Health Hazard Assessment, health risk assessments (which determine the exposure of sensitive receptors to toxic emissions) should be based on a 30-year exposure period for the maximally exposed individual resident. However, such assessments should also be limited to the period/duration of activities associated with the project. The duration of the proposed construction activities would constitute a small percentage of a 30-year exposure period. The construction period for the proposed project would be approximately 4 months, after which construction-related TAC emissions would cease. Due to this relatively short period of exposure and minimal particulate emissions on site, TACs generated during construction would not be expected to result in concentrations causing significant health risks.

Following completion of on-site construction activities, the proposed project would not involve routine operational activities that would generate TAC emissions. Operation of the proposed project would not result in any non-permitted direct emissions (e.g., those from a point source such as diesel generators).

Based on the above considerations, the proposed project would not expose sensitive receptors to substantial pollutant concentrations or health risk during construction or operations, and this impact would be less than significant.

Health Effects of Other Criteria Air Pollutants

Construction and operation of the proposed project would not result in emissions that would exceed the SCAQMD thresholds for VOC, NO_x, CO, SO_x, $PM_{10,}$ or $PM_{2.5}$.

Health effects associated with O_3 include respiratory symptoms, worsening of lung disease leading to premature death, and damage to lung tissue (CARB 2019b). VOCs and NO_x are precursors to O_3, for which the SCAB is designated as nonattainment with respect to the NAAQS and CAAQS. The health effects associated with O_3 are generally associated with reduced lung function. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SCAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur because exceedances of the O_3 CAAQS/NAAQS tend to occur between April and October when solar radiation is highest. The holistic effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact. Because construction of the proposed project and operation of the proposed project as a whole would not exceed SCAQMD thresholds for VOC or NO_x, implementation of the project would not significantly contribute to regional O_3 concentrations or the associated health effects.

Health effects associated with NO_x and NO_2 include lung irritation and enhanced allergic responses (CARB 2019c). Because construction of the proposed project would not generate NO_x emissions that would exceed the SCAQMD mass daily thresholds and because the SCAB is designated as in attainment of the NAAQS and CAAQS for NO_2 and the existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards, construction and operation of the proposed project as a whole would not contribute to exceedances of the NAAQS and CAAQS for NO_2 or result in significant health effects associated with NO_2 and NO_x.

Health effects associated with CO include chest pain in patients with heart disease, headache, light-headedness, and reduced mental alertness (CARB 2019d). CO tends to be a localized impact associated with congested intersections. The associated potential for the project to cause CO hotspots was discussed previously and was determined to be less than significant. Thus, the proposed project would not result in significant health effects associated with this pollutant.

Health effects associated with particular matter (or $PM_{2.5}$ and PM_{10}) include premature death and hospitalization, primarily for worsening of respiratory disease (CARB 2017). Construction of the proposed project and operation of the proposed project as a whole would not exceed thresholds for PM_{10} or $PM_{2.5}$ and would not contribute to exceedances of the NAAQS and CAAQS for particulate matter or obstruct the SCAB from coming into attainment for these pollutants. The proposed project would also not result in substantial DPM emissions during construction and operation, and therefore, would not result in significant health effects related to DPM exposure. Additionally, the project would implement construction dust control strategies and would be required to comply with SCAQMD Rule 403, which limits the amount of fugitive dust generated during construction. Due to the minimal contribution of particulate matter during construction and operation, the proposed project would not result in significant health effects associated with PM_{10} or $PM_{2.5}$.

In summary, construction and operation of the proposed project would not result in exceedances of the SCAQMD significance thresholds for criteria pollutants, and potential health impacts associated with criteria air pollutants would be less than significant.

*d) **Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

Less-Than-Significant Impact. The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would potentially be generated from vehicles and equipment exhaust emissions during construction of the project. Potential odors produced during construction would result from concentrations of unburned hydrocarbons from tailpipes of construction equipment, exposure of waste during grading, architectural coatings, and asphalt pavement application. Such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Additionally, the proposed project does not include demolition of older buildings which may have included asbestos or lead in their building design. Therefore, impacts associated with odors and other emissions during construction would be less than significant.

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting operations, refineries, landfills, dairies, and fiberglass molding facilities (SCAQMD 1993). The project entails continued operation of an existing pump station and would not result in the creation of a land use that is commonly associated with odors. Therefore, project operations would result in an odor impact that would be less than significant.

3.4 Biological Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – 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?	☐	☒	☐	☐

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

The following analysis is based on a biological resources assessment conducted by Dudek Biologist Kimberly Narel on December 22, 2021. This assessment included a review of the latest available relevant reports, maps, soil data, data on biological baselines, special-status habitats, and species distributions to determine those resources that have the potential to occur within the project site and surrounding 100-foot buffer (study area). Attachments referenced herein are included within Appendix B. These attachments include a list of special-status biological resources recorded in the region (Appendix B-1) and photos taken of the project site during a biological reconnaissance (Appendix B-2).

A field assessment was conducted to characterize the environmental conditions, vegetation communities/land covers, and any common or special-status plants or wildlife (including their habitats) that could be impacted during project implementation. During the field survey, vegetation communities and land covers were catalogued and confirmed based on existing site conditions. Vegetation communities were mapped according to the California Department of Fish and Wildlife (CDFW) List of Vegetation Alliances and Associations (or Natural Communities List) which is based on A Manual of California Vegetation, Second Edition (Sawyer et. al. 2009). Dudek compiled a general inventory of plant and wildlife species detected by sight, calls, tracks, scat, or other field indicators, and determined the potential for special-status species to occur within the study area. Additionally, Dudek conducted a preliminary investigation of the extent and distribution of jurisdictional waters of the U.S. regulated by the U.S. Army

Corps of Engineers, jurisdictional waters of the state regulated by the Regional Water Quality Control Board, and CDFW jurisdictional streambed and associated riparian habitat.

Dudek queried the CDFW's California Natural Diversity Database (CNDDB) (CDFW 2021), and the California Native Plant Society's Inventory of Rare and Endangered Plants (CNPS) (CNPS 2021b) to identify special-status biological resources from the region (Appendix B-1). The CNDDB and CNPS were searched based on the U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle for San Juan Capistrano, where the study area is located, as well as the surrounding seven quadrangles (Tustin, El Toro, Santiago Peak, Laguna Beach, Canada Gobernadora, Dana Point, and San Clemente). Potential and/or historic drainages and aquatic features were investigated based on a review of USGS topographic maps (1:24,000 scale), aerial photographs, the National Wetland Inventory database (USFWS 2021), and the Natural Resource Conservation Service Web Soil Survey (USDA 2021).

The study area is depicted on Section 32, Township 6 South, Range 8 West of the San Juan Capistrano topographic quadrangle map. Ancillary structures associated with ETWD are adjacent to the east of the study area, with an asphalt-paved access road to the west. The study area consists of intermixed ornamental and native vegetation with developed land and ranges between 460 to 485 feet above mean sea level. The Laguna Coast Wilderness Park is located approximately 1.5 miles west of the study area and lies within the South Coast Wilderness area. The study area is separated from Laguna Coast Wilderness Park by a mixture of residential, municipal, recreational, and commercial development. One soil type was mapped within the study area: Calleguas clay loam, 50 to 75% slopes, eroded. However, a portion of the observed surface soils have been compacted and altered from their natural composition via urban development, and no longer support natural habitats.

Four vegetation communities and/or land covers were mapped within the study area during the biological reconnaissance (Figure 3.4.1, Biological Resources). Specifically, the study area consists of lemonade berry (*Rhus integrifolia*) Alliance and parry pinyon *(Pinus quadrifolia)* woodland Alliance, with developed land and ornamental vegetation (Sawyer et al. 2009). A total of 17 plant species (9 native and 8 non-native), were recorded within the study area.

The northern portion of the study area is characterized by planted parry pinyon woodland Alliance, dominated by parry pinyon with an understory of sugar bush (*Rhus ovata*) that transitions downslope into coyote bush (*Baccharis pilularis*) (CNPS 2021a). Chain-link fencing acts as a barrier separating this habitat from the adjacent ornamental vegetation community. As the elevation decreases southward, lemonade berry alliance dominates the hillside. This vegetation community is trimmed and maintained along the access road, where lemonade berry is interspersed with occasional saltcedar (*Tamarix ramosissima*). As elevation increases to the north, lemonade berry co-dominates with California sagebrush (*Artemisia californica*) and is interspersed with fountain grass (*Pennisetum setaceum*) and black sage (*Saliva mellifera*), with sporadic deerweed (*Acmispon glaber*) and bush sunflower (*Encelia californica*). No special-status plant species or vegetation communities that are considered rare or sensitive by CEQA (e.g., riparian vegetation) were observed within the study area. Portions of the study area contain coastal sage scrub habitat with the potential to support special-status plants covered under CEQA or considered rare by CNPS, that were not observed during the survey period due to seasonal survey restrictions (completed outside of the spring blooming period).

Two ornamental vegetation communities bisected by the access road occur within the study area. Ornamental vegetation along the northern portion of the study area is characterized by frequently trimmed and maintained golden wattle (*Acacia pycnantha*), pampas grass (*Cortaderia selloana*), and lemonade berry, interspersed sporadically with mulefat (*Baccharis salicifolia*), bush sunflower, and coyote bush. A line of planted desert olive trees (*Forestiera pubescens*) occurs within this ornamental vegetation community along the northeastern portion of the study area

bordering the chain link fence. The second ornamental vegetation community occurs along the southwestern portion of the study area. This area of frequently trimmed and maintained vegetation is dominated by golden wattle and lemonade berry with a scattered overstory of sugar gum eucalyptus (*Eucalyptus cladocalyx*) and *Pinus* sp. California sagebrush, saltcedar, black sage, sunflower bush, and coyote bush occur sporadically within the understory of this community. Developed lands within the study area are characterized by impermeable surfaces including a municipal water tank, chain-link fencing, a concrete staircase with metal guardrails, an asphalt-paved parking lot, and an asphalt-paved access road. Representative photographs of the project site are included in Appendix B-2.

Wildlife species diversity during the survey was low and is likely impacted by the amount of surrounding development, existing disturbances from municipal activities, and limited undisturbed native habitats within the study area. Species observed include the house finch (*Haemorhous mexicanus*), house sparrow (*Passer domesticus*), white-crowned sparrow (*Zonotrichia leucophrys),* Anna's hummingbird (*Calypte anna*), California scrub jay (*Aphelocoma californica*), American bushtit (*Psaltriparus minimus*), and Western honeybee (*Apis mellifera).* No amphibian or reptile species were observed within the study area. Other species expected to occur in urban and developed areas include California ground squirrel (*Otospermophilus beecheyi*), mourning dove (*Zenaida macroura*), and American Crow (*Corvus brachyrhynchos).*

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

Less-than-Significant Impact with Mitigation Incorporated. Based on the database queries of the CNDDB and CNPS, there are 78 special-status plants and 65 special-status wildlife with recorded occurrences in the San Juan Capistrano 7.5-minute USGS quadrangle and surrounding eight quadrangles (Appendix B-1). The project site occurs within a partially developed area and contains native vegetation intermixed with ornamental vegetation on a graded hillside with irrigation lines from previous landscaping development. Adjacent properties, while mostly developed, include areas of ornamental vegetation and parry pinyon woodland habitat that have the ability to potentially support special-status species. No undisturbed natural communities, hydric soils, or natural hydrology occur on the project site due to previous and ongoing disturbances.

Of the 78 special-status plants, based on range, elevation, and associated vegetation and soils, 11 of these species have a low potential to occur within the study area. The remaining 61 species are not expected to occur on the study area. Special-status plant species with a low potential to occur or are not expected to occur have not been evaluated further. Only one species, many-stemmed dudleya *(Dudleya multicaulis*), has a moderate potential to occur within the study area. Many-stemmed dudleya is a CNPS rank 1B.2 species. It is generally found within coastal sage scrub and chaparral, and is associated with heavy clay soils in barrens, dry stony places, or thinly vegetated openings. Many-stemmed dudleya is also associated with California sagebrush present within the study area. Additionally, the study area contains suitable clay loam soils capable of supporting this species. CNDDB species occurrence records from 1998 show many-stemmed Dudley within 2 miles of the study area, in Laguna Coast Wilderness Park within a partially developed coastal canyon, and multiple occurrences are documented within 5 miles of the study area. Therefore, the small patches of exposed soil surrounding California sagebrush within the project site have a moderate potential to support this species. Project-related impacts to this species would be considered significant if the species is found on site and the project will result in a direct impact to this species. Direct impacts to plant species ranked 1B.2 would be considered significant and would require mitigation. To avoid impacts to this species, MM BIO-1 shall be implemented.

MM BIO-1: Special-Status and Rare Plant Species Avoidance. Prior to any project activities that encroach into native habitat, a focused rare plant survey shall be conducted during the species' appropriate blooming season of April to July to determine the presence/absence of many-stemmed dudleya within the study area. If any individual dudleyas are found, additional avoidance/minimization measures may be required. Additional measures may include flagging and avoiding individual species or relocation if flagged specimens cannot be avoided. If relocation is necessary, a relocation plan will be required that outlines the relocation process and determines the appropriate location of transplanted species that will be conserved in perpetuity. Consultation with the resource agencies may be required as part of the relocation process.

With implementation of MM BIO-1, potential indirect impacts to special-status plant species would be less than significant.

Of the 65 special-status wildlife species analyzed for their potential to occur within the study area, based on range, habitat, and surrounding conditions, only 4 of these species have a low potential to occur within the study area. The remaining 61 species have no potential to occur on the study area. The limited amount of native lemonade berry scrub habitat at the site provides very little suitable habitat for the four wildlife species with a low potential to occur. Additionally, the limited native habitat is surrounded by developed land with ornamental vegetation further reducing the potential for special-status wildlife to occur or move onto the study area from native habitat areas off-site. Furthermore, the lack of connection to other sensitive biological resources, such as natural drainages or waterways and large habitat blocks, reduces the potential for any special-status wildlife species to occur within the study area. Therefore, the project would result in no impact to special-status wildlife species.

In summary, the project has the potential to result in impacts to one special-status plant species (many-stemmed dudleya *[Dudleya multicaulis*]) and would not result in impacts to any special-status wildlife species. With incorporation of MM-BIO-1, impacts would be less than significant with mitigation incorporated.

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

No Impact. The project site occurs in a partially developed area dominated by ornamental and scattered native vegetation that lacks any natural drainages or watercourses capable of supporting riparian habitat. There are no channelized drainages or tributaries within the study area. Additionally, no blue line streams are mapped on USGS topographic maps or the National Wetland Inventory for the study area. Further, due to the lack of natural wetland characteristics such as hydrophytic vegetation, hydric soils, and standing water on the project site, no sensitive riparian community was observed or has the potential to occur within the project site. Therefore, the project will result in no impact to riparian habitat or any other sensitive natural communities.

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

Less-Than-Significant Impact. The project site does not contain any natural or human-made drainages, waterways, or connectivity to any potentially regulated water. The project site is partially developed with limited native vegetation on an irrigated graded hillside intermixed with ornamental vegetation. The observed surface soils within the project site have been previously graded from their natural composition and therefore no longer support natural wetland characteristics. Section 3.10, Hydrology and Water Quality, details the best management practices (BMPs) which the project would adhere to during all construction-related activities to prevent indirect impacts caused by ground disturbing activities (i.e., sediment runoff or soil erosion). Indirect impacts would be limited to short-term construction impacts related to erosion, runoff, and dust.

While the U.S Department of Agriculture Natural Resources Conservation Service depicts clay loam soils mapped within the project site, the impact area lacks suitable natural hydrologic conditions and flood capacity to support wetlands or any other jurisdictional feature. No mapped wetland features were located within the study area. As such, no wetlands occur or are expected to occur on the study area. Therefore, provided the BMPs are implemented, the project would result in a less-than-significant impact to state and federally protected waters and wetlands.

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

Less-than-Significant Impact with Mitigation Incorporated. The project site occurs within a partially developed property surrounded by residential, municipal commercial, and recreational development. The project site does not occur within any designated wildlife corridors or habitat linkages, nor does it provide opportunities for wildlife movement through the project site to larger habitat blocks. The ornamental woodland and native scrub habitat within the study area provides opportunities for small- to medium-sized mammals, and particularly avian species, to move through the area. However, chain-link fencing and existing surrounding development act as habitat barriers that prevent wildlife species from dispersing across the study area into other habitats. Additionally, the project site does not function as a wildlife corridor or linkage; as a result, construction of the project would result in no impact or impediment to wildlife movement through the region.

However, the ornamental woodland and native scrub habitat at the project site, as well as the water tank towers to the east of the project site, has the potential to support nesting birds. In addition, ground cover species and scattered bare ground within the study area have the potential to support ground nesting birds. Therefore, construction activities that commence during the avian breeding season of February through August may result in a potentially significant impact to avian species protected by the Migratory Bird Treaty Act and California Fish and Game Code. In order to reduce potential impacts to a less-than-significant level, the project shall implement MM BIO-2 to comply with the Migratory Bird Treaty Act and California Fish and Game Code.

MM BIO-2: Nesting Bird Avoidance. The project should avoid the avian nesting season in order to reduce any potential impact to protected birds and their nests. In the event the project must commence during the nesting season, a pre-construction clearance survey should be conducted within 3 days prior to ground disturbing activities to determine the presence/absence of nesting birds. If an active nest is found a biologist will establish a buffer around the nest until the nestlings have fledged and the nest is no longer active. The buffer will be established by a biologist based on the sensitivity of the species to disturbance and proximity to project activities. Construction activities may continue outside of the buffer under the discretion of a monitoring biologist. Once the biologist has determined the nest is no longer active, the buffer can be removed, and construction may continue.

With implementation of MM-BIO-2, potential indirect impacts to nesting birds would be less than significant with mitigation incorporated.

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

No Impact. The project site occurs on property owned by ETWD. Chapter 4.26 (City of Laguna Woods Tree Ordinance) of the City's Municipal Code regulates the planting, maintenance, protection, and removal of trees on public streets, parks, other City-owned property and in the public rights-of-way, and trees on nonresidential properties. The City Tree Ordinance defines significant trees as all trees and shrubs located within public rights-of-way and/or on City-owned property (City of Laguna Woods 2007). The project site does not contain suitable significant trees, and none will be removed for the project. As such, the City of Laguna Woods Municipal Code does not apply to any biological resource found within the project site. The project would adhere to all applicable guidelines set forth within sections 5 and 6 of the local guidelines for implementing CEQA for El Toro Water District (2021). Therefore, the project would result in no impact with regard to local policies or ordinances.

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

Less-Than-Significant Impact. The project site occurs within the boundaries of the Central/Coastal Subarea Plan of the Orange County Natural Community Conservation Plan/Habitat Conservation Plan (OC NCCP/HCP). However, the project site is not mapped within any conservation areas, linkages, or habitat reserves. Additionally, ETWD is not a signatory to the OC NCCP/HCP and therefore is not provided take coverage for covered species or habitats that may be impacted by the project. Impacts related to project construction would be limited and would not result in impacts to coastal sage scrub habitat or the federally threatened coastal California gnatcatcher (*Polioptila californica californica*) which are the focus of protection within the OC NCCP/HCP. The project, as currently designed, would be in compliance with the biological goals and policies set forth in the OC NCCP/HCP, particularly with implementation of the mitigation measures prescribed above. Therefore, the construction of the proposed project would result in less-than-significant impacts with regard to any adopted or approved conservation plan.

3.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

The project's area of potential effects (APE) consists of approximately 0.49 acres and encompasses a portion of ETWD's R-1/R-2 Reservoir Site for the installation of a new pump station and associated improvements. A Phase I Cultural Resources Inventory Report was prepared by Dudek in February 2022 and is provided in Appendix C. The study included a records search, archival research, Native American outreach, field survey, and evaluation.

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

No Impact. As defined by the CEQA Guidelines (14 CCR 15000 et seq.), a "historical resource" is considered to be a resource that is listed in or eligible for listing in the National Register of Historic Places or California Register of Historical Resources (CRHR), has been identified as significant in a historical resource survey, or is listed on a local register of historical resources. Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; 14 CCR 15064.5[b]). If a site is listed or eligible for listing in CRHR, or included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1[q]), it is a historical resource and is presumed to be historically or culturally significant for the purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5[a]).

Dudek requested a records search at the South Central Coastal Information Center (SCCIC) for the project APE and a 0.5-mile radius buffer around the APE on December 9, 2021, to assist in the identification of historical resources in proximity of the project site. The records search identified two cultural resources within the 0.5-mile search buffer of the project APE: a prehistoric campsite (P-30-00610/CA-ORA-000610) and a historic church (P-30-177526). The closest resource to the project APE is P-30-00610/CA-ORA-000610, a prehistoric campsite located immediately adjacent and north of the project APE. The proposed current project would not impact (direct or indirect) P-30-00610/CA-ORA-000610 or P-30-177526. Additionally, there are no cultural resources or historic addresses located within the project APE.

A pedestrian survey and background research of the project APE have determined that there are no historic structures currently present within the project APE. Dudek searched archival topographic maps and historic

aerial images of the project area and determined that the project APE did not show any development from 1938 to 1963. The project APE has never been historically occupied or developed residentially; the only structure within the APE is a water tank associated with the ETWD R-1/R-2 Reservoir Site. During the pedestrian survey of the project APE, it was apparent that the APE was highly disturbed by construction of the water tanks and did not reveal any historic structures or features. Therefore, there would be no impacts to historical structures pursuant to Section15064.50.

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

Less-Than-Significant Impact With Mitigation Incorporated. As part of the Negative Cultural Resources Inventory Report prepared by Dudek (Appendix C), a records search of the project APE and a 0.5-mile buffer around the proposed project APE was requested by Dudek staff from the SCCIC on December 9, 2021. These records indicate that no cultural resources have been recorded within the project APE. A total of two previously recorded resources were identified within the surrounding 0.5-mile buffer: a prehistoric campsite (P-30-00610/P-30-000610) and a historic church (P-30-177526). The closest resource to the project APE is P-30-00610/CA-ORA-000610, a prehistoric campsite located immediately adjacent and north of the project APE. P-30-00610/CA-ORA-000610 is noted as being totally destroyed due to the grading activities for the installation of the water tanks and nursery terracing. The proposed current project would not impact (direct or indirect) CA-ORA-000610 or P-30-177526.

The Sacred Lands File search conducted at the Native American Heritage Commission (NAHC) did not identify cultural resources for the project. ETWD led the Assembly Bill (AB) 52 efforts and led consultation with the tribes that are traditionally and cultural affiliated with the project area. Consultation efforts are summarized in Section 3.18, Tribal Cultural Resources, of this IS/MND.

A pedestrian field survey was conducted by Dudek on December 22, 2021, and no cultural resources were identified within the project APE. As concluded from the archival research and pedestrian survey, the APE is highly disturbed from the construction of the water tanks, access road, and landscaping and irritation associated with ETWD's R-1/R-2 Reservoir Site. Although no cultural resources were identified within the project site, there is a potential for construction of the proposed project to impact previously unidentified cultural resources or archaeological deposits. The following mitigation measure MM-CUL-1 will be implemented to reduce impacts to unknown subsurface archaeological resources. With implementation of mitigation measure MM-CUL-1, impacts to archaeological resources pursuant to Section15064.5 would be reduced to a less-than-significant level.

MM-CUL-1 In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards can evaluate the significance of the find. Construction activities may continue in other areas, but should be redirected a safe distance from the find. If the new discovery is evaluated and found to be significant under CEQA and avoidance is not feasible, additional work such as data recovery may be warranted. In such an event, a data recovery plan should be developed by the qualified archaeologist in consultation with the ETWD and Native American representatives, if applicable. Ground disturbing work can continue in the area of the find only after impacts to the resources have been mitigated and with ETWD approval.

c) Would the project disturb any human remains, including those interred outside of formal cemeteries?

Less-Than-Significant Impact With Mitigation Incorporated. The project site is not currently used as a cemetery and is not otherwise known to contain human remains. However, there is a potential to discover unknown buried Native American human remains or sacred features during construction. If unanticipated Native American human remains or sacred features were discovered because of ground-disturbing activities, then the project would have a significant impact on disturbance of human remains. With implementation of mitigation measure MM-CUL-2, impacts to previously unknown human remains would be reduced to a less-than-significant level.

MM-CUL-2 In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code Section 5097.98, the NAHC must immediately notify the person or persons it believes to be the Most Likely Descendant (MLD) from the deceased Native American. The MLD shall complete inspection within 48 hours of being granted access to the site and make recommendations for the treatment and disposition, in consultation with the property owner, of the human remains.

3.6 Energy

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

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

Less-Than-Significant Impact. Construction of the project would require the consumption of energy resources in several forms at the project site and within the project area. Energy consumption associated with project construction is evaluated in detail below.

Construction

Electricity

Temporary electric power for as-necessary lighting and electronic equipment (such as computers inside temporary construction trailers) would be provided by SCE. The electricity used for such activities would be temporary would have a negligible contribution to the region's overall energy consumption.

Natural Gas

Natural gas is not anticipated to be required during construction of the project. Fuels used during construction would primarily consist of diesel and gasoline, which are discussed under Petroleum. Any minor amounts of natural gas that may be consumed as a result of project construction would have a negligible contribution to the region's overall energy consumption.

Petroleum

Heavy-duty construction equipment and vendor trucks associated with construction activities would rely on diesel fuel. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed in this analysis that construction workers would travel in gasoline-powered light-duty vehicles. Heavy-duty construction equipment of various types would be used during each phase of project construction.

In summary, construction of the project is anticipated to consume petroleum over approximately four months. California's consumption of petroleum is approximately 74.8 million gallons per day. Based on these assumptions, approximately 7 billion gallons of petroleum would be consumed in California over the course of the construction period (EIA 2017). Within Orange County, approximately 500 million gallons of petroleum (gasoline and diesel) would be consumed over the course of the construction period (CARB 2020). Therefore, impacts associated with energy consumption during construction would be less than significant.

Operation

The project would include the installation of replacement of an equipment and an existing pump station. The project would not result in a change in existing routine operation and maintenance or capacity of the existing water supply system. The project is intended to result in less overall emergency maintenance needs in the long-term. No additional District staff is anticipated to be required for the continued operation of the project. Therefore, no impacts associated with energy consumption during operation of the project would occur.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less-Than-Significant Impact. The project would be consistent with CARB's Scoping Plan, AB 32, and Senate Bill (SB) 32. The project would not conflict with existing energy standards and regulations; therefore, impacts during construction and operation of the project would be less than significant. Therefore, the project would not conflict with plans for renewable energy or energy efficiency and impacts would be less than significant.

3.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

The following analysis is based on the Geotechnical Investigation prepared by Soils Engineering, Inc., and included as Appendix D.

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

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

No Impact. The Alquist-Priolo Earthquake Zoning Act requires the delineation of fault zones along active faults in California. The purpose of the Alquist-Priolo Earthquake Zoning Act is to regulate development on or near active fault traces to reduce hazards associated with fault rupture. The Alquist-Priolo Earthquake Fault Zones are the regulatory zones that include surface traces of active faults. The project site is not located within a designated Alquist-Priolo Earthquake Fault Zone (City of Laguna Woods 2002). Additionally, the project's Geotechnical Investigation (Appendix D) determined that the project site was not located within a seismic hazard zone, The nearest Alquist-Priolo Fault Zone to the project site is the Newport-Inglewood fault zone, located approximately 15 miles northwest of the project site. Therefore, no impacts associated with fault rupture would occur.

ii) Strong seismic ground shaking?

Less-Than-Significant Impact. The project site is situated in a seismically active region. As is the case for most areas of southern California, ground shaking resulting from earthquakes associated with nearby and more distant faults may occur at the project site. During the life of the project, seismic activity associated with active faults can be expected to generate moderate to strong ground shaking at the site.

The proposed project would be designed and built in accordance with the seismic parameters of the most recent federal, state, and local building regulations, ETWD's Standards and Specifications, and other regulatory requirements. Therefore, based on compliance with applicable state requirements related to seismic hazards, impacts associated with strong seismic ground shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less-Than-Significant Impact. Liquefaction is typified by a buildup of pore water pressure in the affected soil layer to a point where a total loss of shear strength may occur during a seismic event, causing the soil to behave as a liquid. The California Geological Survey regulatory maps determined that the project site is not located in an area susceptible to liquefaction (CGS 2019). Further, the Geotechnical Investigation (Appendix D) determined that the potential for liquefaction is low due to the underlying bedrock and historic high groundwater being greater than 50 feet in depth. The proposed project would be designed and built in accordance with the seismic parameters of the most recent federal, state, and local building regulations, ETWD's Standards and Specifications, and other regulatory requirements. Compliance with such regulations would ensure impacts associated with seismic-related ground failure, including liquefaction would be less than significant.

iv) Landslides?

Less-Than-Significant Impact. Landslides are typical on moderate to steep slopes. Many factors including slope height, slope steepness, shear strength, and orientation of weak layers in the underlying geologic units contribute to landslide susceptibility. The California Geological Survey regulatory maps determined that the

project site is located in an area susceptible to landslides (CGS 2019). Additionally, the Geotechnical Investigation determined that the project site has a low potential for earthquake-induced landslides. Isolated surface failures may occur on slopes that surround the site, but these potential landslide areas would not affect project construction or operation (Appendix D). The project site does not have underlying bedrock with existing failures, and the project would help stabilize the slopes. In addition, the proposed project would be designed and built in accordance with the seismic parameters of the most recent federal, state, and local building regulations, ETWD's Standards and Specifications, and other regulatory requirements. Compliance with such regulations would further reduce potential impacts related to landslides. Adverse impacts related to landslides is considered low and impacts would be less than significant.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less-Than-Significant Impact. Excavation and ground-disturbing activities during construction of the proposed project could potentially leave loose soil exposed to the erosive forces of rainfall and high winds, which would increase the potential for soil erosion and loss of topsoil. Adequate drainage on the project site is critical in reducing potential soil erosion or the loss of topsoil. Project construction would involve site preparation and grading, which may temporarily expose soils to increased erosion potential and loss of topsoil. The project would be required to comply with the applicable sections of Chapter 10.06, Grading Code, of the City's Municipal Code. Section 10.06.300 defines erosion control and water quality requirement systems that projects would implement to reduce erosion impacts (City of Laguna Woods 2021). Upon completion of construction, the project would introduce impervious surfaces to the site that would help to stabilize on-site soils. As a result, the project would not result in new or more severe conditions that would allow for soil erosion to occur. Therefore, impacts would be less than significant.

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

Less-Than-Significant Impact. As previously discussed, the project site is located in close proximity to landslide-designated zones. However, the project site is not located on potentially liquefiable land or unstable bedrock. The potential for lateral spreading due to a nearby seismic event is considered low. Soils that underlie the project site also have low potential for subsidence or collapse to occur. Compliance with federal, state, and local building regulations would reduce potential impacts associated with unstable soils. With adherence to all recommendations for the proposed project, impacts related to unstable soils would be less than significant.

d) Would the project 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?

Less-than-Significant Impact. Expansive soils are characterized by their potential shrink/swell behavior. Shrink/swell is the change in volume (expansion and contraction) that occurs in certain fine-grained clay sediments from the cycle of wetting and drying. Much of the damage to building foundations, roads, and other structures can be caused by the swelling and shrinking of soils as a result of wetting and drying. The upper soils at the project site are low in expansion potential (Appendix D). Further, compliance with federal, state, and local building regulations would reduce potential impacts associated with expansive soils. Therefore, impacts associated with expansive soils would be less than significant.

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

No Impact**.** The proposed project would not require septic tanks or any other alternative wastewater disposal system. Therefore, no impacts associated with the ability of soils to support septic tanks would occur.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact With Mitigation Incorporated. The project site lies in the southeast region of the Santa Ana Mountains Block within the northern Peninsular Ranges Physiographic Province (Morton and Miller 2006). Three major fault bounded blocks comprise the Peninsular Ranges, with the Santa Ana Mountains block being the westernmost, underlain by tertiary rock ranging from Paleocene to Pliocene in age (Morton et al. 1999). Its basement is composed mainly of the Peninsular Ranges Batholith (tonalite and granodiorite) and metasedimentary rock (Morton and Miller 2003).

The project site is located immediately southwest of Moulton Parkway and El Toro Road, west of the San Joaquin Hills and north of Aliso Creek. Geological mapping by Morton and Miller (2006) at a 1:100,000 scale indicates the project site is underlain by the late Oligocene to early Miocene (approximately 28 million years ago–16 million years ago) Vaqueros Formation (map unit Tv). The Vaqueros Formation is characterized by massive beds of marine siltstone and sandstone deposits with the potential for significant paleontological resources. The Vaqueros Formation unconformably overlies the middle Eocene Santiago Formation, composed of marine and nonmarine sandstone and conglomerate (Morton et al. 1999).

To assist in determining the paleontological sensitivity of the project site and determine if there are paleontological localities within or nearby the project site, Dudek requested a paleontological records search from the Natural History Museum of Los Angeles County (LACM). Per their findings, no fossil localities are known from within the site's proposed area of impact. However, three localities surrounding the project produced both marine vertebrates and invertebrates at surface or at unknown depths below the ground surface (bgs) from the Vaqueros Formation. The invertebrate localities include LACM IP (invertebrate paleontology) 1189, which produced scallops (*Amussiopecten* and *Lyropecten*) from an unknown depth bgs, along Moulton Parkway near El Toro Road in Laguna Hills and LACM IP 7848, which yielded unspecified invertebrate fossils on the surface in Laguna Canyon (LACM 2021). LACM VP (vertebrate paleontology) 7548–7551 and 7675–7678 produced baleen and toothed whales, dolphin, desmostylian marine mammals, fishes, and miscellaneous invertebrate fossils during construction related salvage operations (LACM 2021). The presence of these localities signifies the potential for significant paleontological resources within the project site.

No paleontological resources were identified within the project site as a result of the institutional records search and desktop geological and paleontological review, and the project site is not anticipated to be underlain by unique geologic features. The Vaqueros Formation has produced significant paleontological resources in the area and is considered to have high paleontological sensitivity. Artificial fill, if present, has no paleontological sensitivity. Given the proximity of past fossil discoveries in the surrounding area and the potential for significant invertebrate and vertebrate fossils below any artificial fill present within the project site, the site is highly sensitive for supporting paleontological resources. In the event that intact paleontological resources are located on the project site, ground-disturbing activities associated with construction of the project, such as grading during site preparation and trenching for pipelines or utilities have

the potential to destroy a unique paleontological resource or site. Without mitigation, the potential damage to paleontological resources during construction would be a potentially significant impact. However, upon implementation of MM-GEO-1, impacts would be reduced to below a level of significance. Impacts of the proposed project are considered less than significant with mitigation incorporated during construction.

MM-GEO-1 Prior to commencement of any grading activity on-site, the applicant shall retain a certified Orange County paleontologist. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP) (2010) and should outline requirements for preconstruction meeting attendance and worker environmental awareness training, where monitoring is required within the project site based on construction plans and/or geotechnical reports, procedures for adequate paleontological monitoring and discoveries treatment, paleontological methods (including sediment sampling for microvertebrate fossils), reporting, and collections management. The qualified paleontologist shall attend the preconstruction meeting and a qualified paleontological monitor shall be on-site during all rough grading and other significant ground-disturbing activities, including augering with 2-foot diameter or greater augers within the Vaqueros Formation. This formation may be encountered directly below ground surface or directly under any artificial fill present. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor will remove the rope and allow grading to recommence in the area of the find.

3.8 Greenhouse Gas Emissions

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

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

Less-Than-Significant Impact. Climate change refers to any significant change in measures of climate (e.g., temperature, precipitation, or wind patterns) lasting for an extended period of time (i.e., decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's

system, and many factors (natural and human) can cause changes in Earth's energy balance. The greenhouse effect is the trapping and buildup of heat in the atmosphere near the Earth's surface (the troposphere). The greenhouse effect is a natural process that contributes to regulating the Earth's temperature, and it creates a livable environment on Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise. Global climate change is a cumulative impact; a project contributes to this impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. Thus, GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008).

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride (see also CEQA Guidelines Section 15364.5). The three GHGs evaluated herein are CO_2, CH_4, and N_2O because these gases would be emitted during project construction and operation.

The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons (MT) of CO_2 equivalent (CO_2e). Consistent with CalEEMod Version 2020.4.0, this GHG emissions analysis assumes the GWP for CH_4 is 25 (i.e., emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

As discussed in Section 3.3, the project is located within SCAQMD jurisdictional boundaries. In October 2008, the SCAQMD proposed recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects as presented in its Draft Guidance Document—Interim CEQA Greenhouse Gas (GHG) Significance Threshold (SCAQMD 2008a). This document, which builds on the previous guidance prepared by the California Air Pollution Control Officers Association, explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the Governing Board. However, in December 2008, the SCAQMD adopted an interim 10,000 metric tons of CO_2 equivalent (MT CO_2e) per-year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency (SCAQMD 2008). The 10,000 MT CO_2e per-year threshold, which was derived from GHG reduction targets established in Executive Order (EO) S-3-05, was based on the conclusion that the threshold was consistent with achieving an emissions capture rate of 90% of all new or modified stationary source projects.

The SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. From December 2008 to September 2010, the SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The SCAQMD has continued to consider adoption of significance thresholds for residential and general land-use development projects. The most recent proposal issued by SCAQMD, issued in September 2010, uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

Tier 1 Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.

Tier 2 Consider whether or not the project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.

Tier 3 Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO_2e per-year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e per year), commercial projects (1,400 MT CO_2e per year), and mixed-use projects (3,000 MT CO_2e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO_2e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.

Tier 4 Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of Assembly Bill (AB) 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO_2e per service population for project level analyses and 6.6 MT CO_2e per service population for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

Tier 5 Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

Because the proposed project as a whole consists of a construction and operation of a pump station, this analysis applies the recommended SCAQMD threshold of 3,000 MT CO_2e per year, applicable to all non-industrial projects (see "Tier 3"). Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the project, which is assumed to be 30 years (SCAQMD 2008). This impact analysis, therefore, adds amortized construction emissions to the estimated annual operational emissions and then compares operational emissions to the threshold.

Construction

Construction of the proposed project would result in GHG emissions, which are primarily associated with the use of off-road construction equipment, on-road haul and vendor trucks, and worker vehicles. The SCAQMD Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold (SCAQMD 2008) recommends that "construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies." Thus, the total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions for comparison with the GHG significance threshold of 3,000 MT CO_2e per year. The determination of significance, therefore, is addressed in the operational emissions discussion following the estimated construction emissions.

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 3.3. For the purposes of this analysis, construction of the proposed project is assumed to

commence in June 2022, lasting a total of 4 months and reaching completion in October 2022.[7] On-site sources of GHG emissions include off-road equipment and off-site sources include vendor trucks and worker vehicles. Table 3.8-1 presents construction GHG emissions for the proposed project from on-site and off-site emission sources.

Table 3.8-1. Estimated Annual Construction Greenhouse Gas Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2022	101.76	0.02	<0.01	102.61
			Amortized Emissions (over 30 years)	3.42

Source: Appendix A.
Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.

As shown in Table 3.8-1, the estimated total GHG emissions during construction of the proposed project would be approximately 103 MT CO_2e. Estimated project-generated construction emissions amortized over 30 years would be approximately 3 MT CO_2e per year. Therefore, the project's estimated GHG emissions would not exceed the 3,000 MT CO_2e, threshold. As with project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the proposed project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. Thus, the project's GHG emissions would be less than significant.

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

Less-Than-Significant Impact. The project would result in less-than-significant impacts related to conflicts with GHG emission reduction plans, for the reasons described as follows.

Potential to Conflict with the CARB Scoping Plan

The Climate Change Scoping Plan, approved by CARB in 2008 and updated in 2014 and 2017, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, and it is not intended to be used for project-level evaluations.[8] Under the Scoping Plan, however, several state regulatory measures aim to identify and reduce GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area-source emissions (e.g., energy usage and high-GWP GHGs in consumer products) and changes to the vehicle fleet (e.g., hybrid, electric, and more fuel-efficient vehicles) and associated fuels, among others. Nonetheless, the project would comply with various GHG emission reduction regulations to

7 In practice, construction may begin at a later date. However, using an earlier start date for construction represents more conservative/worst-case scenario construction impacts, because standards for in-use off-road equipment and heavy-duty trucks become more stringent over time. As such, a later start date would result in similar or slightly reduced emissions relative to those that are shown herein for the June 2022 start date.

8 The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009).

the extent they apply to the project's emissions sources including CARB's tractor-trailer GHG regulations and Heavy-Duty Greenhouse Gas Standards for New Vehicle and Engines.

Potential to Conflict with the Southern California Association of Governments 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy

The SCAG 2020–2045 RTP/SCS is a regional growth management strategy that targets per capita GHG reduction from passenger vehicles and light trucks in the Southern California Region pursuant to SB 375. In addition to demonstrating the Region's ability to attain the GHG emission-reduction targets set forth by CARB, the 2020–2045 RTP/SCS outlines a series of actions and strategies for integrating the transportation network with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Thus, successful implementation of the 2020–2045 RTP/SCS would result in more complete communities with various transportation and housing choices while reducing automobile use.

The following strategies are intended to be supportive of implementing the 2020–2045 RTP/SCS and reducing GHGs, focus growth near destinations and mobility options, promote diverse housing choices, leverage technology innovations, support implementation of sustainability policies, and promote a green region (SCAG 2020). The strategies that pertain to residential development, mobility options, promoting a green region and SCAG's support of local jurisdiction sustainability efforts would not apply to the project. The project's potential to conflict with the remaining applicable strategies is presented below.

Leverage Technology Innovations. One of the technology innovations identified in the 2020–2045 RTP/SCS that would apply to the project is the promotion and support of low emission technologies for transportation, such as alternative fueled vehicles to reduce per capita GHG emissions. The project would not conflict with SCAG's ability to implement this strategy and would utilize electric pumps during operation.

Based on the analysis above, the project would be consistent with the SCAG 2020–2045 RTP/SCS.

Potential to Conflict with Senate Bill 32 and Executive Order S-3-05

Regarding consistency with SB 32 (goal of reducing GHG emissions to 40% below 1990 levels by 2030) and EO S-3-05 (goal of reducing GHG emissions to 80% below 1990 levels by 2050), there are no established protocols or thresholds of significance for that future-year analysis. However, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan: Building on the Framework that "California is on track to meet the near-term 2020 GHG emissions limit and is well-positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, CARB (2014) states the following:

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under Assembly Bill 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally-driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, SB 32, and EO S-3-05. This is confirmed in the 2017 Climate Change Scoping Plan Update, which states (CARB 2017b):

> The Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities.

The project would not interfere with implementation of GHG reduction goals for 2030 or 2050 because it would not exceed the SCAQMD's recommended threshold of 3,000 MT CO_2e per year for all projects. Because the project would not exceed these thresholds, this analysis provides support for the conclusion that the project would not impede the state's trajectory toward the previously described statewide GHG reduction goals for 2030 or 2050.

Summary

Based on the considerations previously outlined, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs; therefore, the impact would be less than significant.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site that 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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	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?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

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

Less-Than-Significant Impact.

Construction-Related Impacts

A variety of hazardous substances and wastes could be stored, used, and generated during construction of the proposed project. These would include fuels for machinery and vehicles, new and used motor oils, cleaning solvents, paints, sealants, and storage containers and applicators containing such materials. Accidental spills, leaks, fires, explosions, or pressure releases involving hazardous materials represent a potential threat to human health and the environment if not appropriately addressed. Accident prevention and containment are the responsibility of the construction contractors, and provisions to properly manage hazardous substances and wastes are typically included in ETWD's construction specifications. ETWD monitors all contractors for compliance with applicable regulations, including regulations regarding hazardous materials and hazardous wastes. Adherence to ETWD's construction specifications and applicable regulations regarding hazardous materials and hazardous waste would ensure that construction of the proposed facility involving hazardous materials would not create a significant hazard to the public or the environment.

Operational Impacts

ETWD uses a number of hazardous materials in the maintenance and repair of the facility. These hazardous materials consist of small quantities of "off-the-shelf" substances that do not represent a significant potential health hazard and include materials such as lubricant oils and paints. ETWD has adopted a comprehensive Emergency Response Plan to provide adequate equipment and training to its personnel to detect, respond to, mitigate, and abate hazards that could occur during an accidental release of hazardous materials. The proposed project would not introduce any additional hazardous materials to the site during the operation and maintenance phase that do not currently exist at the facility. Therefore, the proposed project would pose a less-than-significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

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

Less-Than-Significant Impact. Refer to Section 3.9(a).

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

No Impact. The nearest school is The Geneva School OC, a private school for grades K-8, located 0.25 miles west of the project site. However, as described in Section 3.9(a), the proposed project does not involve chemical storage or use and would not result in hazardous emissions. Therefore, the project would have no impact on schools.

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

No Impact. According to a review of regulatory databases, the project area is not included in the list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5 (DTSC 2021; SWRCB 2021). Therefore, no impact would occur.

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

No Impact. The closest airport to the project site is the John Wayne Airport, located approximately 9 miles to the northwest. The proposed project would not be located in the airport influence area for the John Wayne Airport (ALUC 2008). Therefore, the project would not result in a safety hazard for people residing or working in the project area, and there would be no impact.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less-Than-Significant Impact. The City of Laguna Woods has an Emergency Operations Plan that is intended to initiate, manage, and sustain an effective local response to extraordinary emergency situations (City of Laguna Woods 2002). No revisions of this plan would occur as a result of the project. The project does not propose any changes to the geometry of evacuation route roadways to the extent that these roadways' ability to serve as emergency evacuation routes would be compromised. As a result, the project would not significantly affect emergency response or evacuation activities. Therefore, impacts would be less than significant.

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

No Impact. The City's General Plan Safety Element does not designate the project site as an area that would be at risk from wildland fires (City of Laguna Woods 2002). Although the project site is on a mostly undeveloped hillside, the area surrounding the project site is largely developed and would not likely aid the spread of wildfire. Therefore, no direct or indirect impacts due to wildfire would occur.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off site;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less-Than-Significant Impact. Construction of the project would include earthwork activities that could potentially result in erosion and sedimentation, which could subsequently degrade downstream receiving waters and violate water quality standards. Stormwater runoff during the construction phase may contain silt and debris, resulting in a short-term increase in the sediment load of the municipal storm drain system.

Substances such as oils, fuels, paints, and solvents may be inadvertently spilled on the project site and subsequently conveyed via stormwater to nearby drainages, watersheds, and groundwater.

The project would be required to comply with the applicable sections of Chapter 4.14, Water Quality, of the City's Municipal Code. Because construction of the project would not violate any water quality standards or waste discharge requirements, the project would not otherwise substantially degrade surface or groundwater quality. Section 4.14.030 requires the implementation of BMPs intended to protect the City's surface and groundwater water quality (City of Laguna Woods 2021). Upon completion of construction, the project would introduce impervious surfaces to the site that would help to stabilize on-site soils. As a result, the project would not result in new or more severe conditions that would allow for soil erosion and any adverse downstream water quality effects to occur. Therefore, impacts would be less than significant.

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

Less-than-Significant Impact. The project site is located in the Aliso Creek Groundwater Basin (Basin). The Basin underlies the Aliso Creek and several tributary valleys in southern Orange County. While construction of project would introduce more impervious surface to the project site, the pump station building makes up a small portion of the area project site is located on. Areas to the north and east of the site would remain pervious. The proposed project is not anticipated to encounter groundwater during excavation or ground-disturbing activities Furthermore, the project would not require groundwater during construction or operation activities. As such, impacts to groundwater supplies and recharge would be less than significant.

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

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

Less-Than-Significant Impact. Excavation and ground-disturbing activities during project construction could potentially leave loose soil exposed to the erosive forces of rainfall and high winds, which would increase the potential for soil erosion and loss of topsoil. Adequate drainage on the project site is critical in reducing potential soil erosion or the loss of topsoil. The project would be required to comply with the applicable sections of Chapter 10.06, Grading Code, of the City's Municipal Code. Section 10.06.300 defines erosion control and water quality requirement systems that projects would implement to reduce erosion impacts (City of Laguna Woods 2021). Upon completion of construction, the project would introduce impervious surfaces to the site that would help to stabilize on-site soils. As a result, the project would not result in new or more severe conditions that would allow for soil erosion to occur. Therefore, impacts would be less than significant.

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

Less-Than-Significant Impact. The project would introduce minor new impervious area to the site. Although the project would result in some change to the existing drainage pattern of the site, the new proposed surfaces would be minor and are of such a small size (i.e.,, less than 1 acre) that they would not substantially change or increase the rate or amount of surface runoff during storm events. Once the proposed improvements are installed, trenches and other disturbed areas would be returned to a state

similar to pre-project conditions, and existing drainage patterns would be restored. The proposed pipelines would be installed underground, the pump station building would be installed on the hill, and disturbed areas would be returned to a state similar to pre-project conditions. Therefore, impacts associated with surface runoff and on-site or off-site flooding during construction would be less than significant.

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?

Less-Than-Significant Impact. As discussed, the project would be required to comply with the applicable sections of Chapter 10.06, Grading Code, and Chapter 4.14, Water Quality, of the City's Municipal Code. Once the proposed improvements are installed, trenches and other disturbed areas would be returned to a state similar to pre-project conditions, and existing drainage patterns would be restored. Upon restoration of project areas, the project would not 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. Therefore, impacts associated with runoff would be less than significant.

iv) Impede or redirect flood flows?

No Impact. The project would not alter any natural waterways or drainages. Additionally, per the Federal Emergency Management Agency flood maps, the project site is located in an area with minimal flood hazard (FEMA 2021). Therefore, no impacts associated with impeding or redirecting flood flows would occur.

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

Less-Than-Significant Impact. Seiches are large waves generated in enclosed bodies of water in response to ground shaking. The closest body of water to the project site is Veeh Reservoir, located approximately 0.9 miles north of the site. However, the distance dividing the project site from Veeh Reservoir makes potential impacts associated with seiche highly unlikely. Tsunamis are large waves generated in large bodies of water by fault displacement or major ground movement. Based on the inland location of the project site, tsunamis do not pose a hazard to the proposed project. Additionally, per the Federal Emergency Management Agency flood maps, the project site is located in an area with minimal flood hazard (FEMA 2021). Further, the proposed project would implement BMPs to ensure flows from the project site would not release pollutants into downstream receiving waters. Therefore, impacts associated with risk of release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone would be less than significant.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less-Than-Significant Impact. The proposed project would comply with regional and local regulations and would not obstruct existing water quality control plans or groundwater sustainable management plans. In addition, the proposed project is not considered a suitable site for groundwater recharge and would not introduce new impervious areas over a significant groundwater recharge zone. Therefore, impacts associated with conflict with a water quality control plan or sustainable groundwater management plan would be less than significant.

3.11 Land Use and Planning

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI.	**LAND USE AND PLANNING** – Would the project:				
a)	Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a) Would the project physically divide an established community?

No Impact. The physical division of an established community is typically associated with the construction of a linear feature, such as a major highway or railroad tracks, which would impair mobility within an existing community or between a community and an outlying area. The proposed project would be located on the hillside to the northwest of the existing ETWD R-2 reservoir and would not divide an established community. Therefore, no impact would occur.

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

No Impact. The proposed project would construct an approximately 540 square foot pump station on the hillside to the northwest of the existing ETWD R-2 reservoir. The proposed project would not change the site's use. The existing R-1/R-2 Reservoir Site is currently designated as Commercial under the City of Laguna Woods General Plan Land Use Map (City of Laguna Woods 2017a). Government and quasi-governmental facilities, such as water districts and electrical utilities, are allowable uses under the Commercial designation. Additionally, the project site is zoned Community Commercial (CC) on the City of Laguna Woods Zoning Map (City of Laguna Woods 2017b) and according to the City of Laguna Woods Municipal Code, government and quasi-governmental facilities are also an approved use within areas zoned CC (City of Laguna Woods 2021). Therefore, the project would be in compliance with the Municipal Code and no impacts would occur.

3.12 Mineral Resources

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

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

No Impact. According to the County of Orange General Plan Resource Element, there are several aggregate resource areas, including the Santa Ana River, Lower Santiago Creek, Upper Santiago Creek, San Juan Creek, and Arroyo Trabuco (County of Orange 2005). These aggregate resource areas are not located within the vicinity of the project site. The project site is not currently used for mineral resource purposes and is not zoned for mining purposes. Therefore, no impacts to regionally valuable mineral resources would occur.

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

No Impact. As previously discussed above in Section 3.12(a), there are several aggregate resource areas in Orange County. However, the project site is not identified as being located on or near a locally important mineral resource recovery site. Therefore, no impact to a mineral resource recovery site would occur.

3.13 Noise

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE – 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?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

Existing Conditions

Existing noise levels were measured near the project site western boundary, as shown in Figure 3.13-1, in order to establish baseline noise conditions against which to compare project construction and operation noise levels. A total of three short-term noise measurements were performed using a SoftdB "Piccolo" model (American National Standards Institute Type II) sound level meter. The sound level meter had its calibration status checked in the field before conduct of the measurements. Table 3.13-1 summarizes the dates, start/stop times, and key metrics for each short-term sound level measurement. Fieldnotes taken by the attending investigator are provided in Appendix E.

Table 3.13-1. Existing Ambient Noise Measurement Results

Location	Date (mm/dd/yy)	Start Time (hh:mm)	Stop Time (hh:mm)	L_{eq} (dBA)	L_{max} (dBA)	L_{min} (dBA)
ST-1	1/13/22	10:36	10:51	50.7	62.3	48.0
ST-2	1/13/22	10:19	10:34	47.2	61.3	42.4
ST-3	1/13/22	09:58	10:13	51.1	64.4	40.6

Notes: See Figure 3.13-1 and Appendix E.
ST = short-term; dBA = A-weighted decibel; L_{max} = maximum sound level measured during a one-minute interval within the 15-minute measurement period; L_{min} = minimum sound level measured; L_{eq} = energy-averaged sound level measured.

The measured outdoor ambient sound level samples presented in Table 3.13-1 are generally consistent with daytime energy-averaged sound level measured (L_{eq}) values for traffic noise estimates of 50 to 55 A-weighted decibels (dBA) from "other roadways" (e.g., parkways, like El Toro Road and Moulton Parkway) at distances ranging from 200 feet to over 400 feet (FTA 2018).

Regulatory Setting

Federal

Although intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (FTA 2018) are routinely used for projects proposed by or under the jurisdiction of counties or municipalities. FTA has published guidelines for assessing the impacts of ground-borne vibration associated with transit projects, which

have been applied by other jurisdictions to other types of projects. The FTA threshold for potential architectural damage to "engineered concrete and masonry buildings," such as the nearby Ayres Hotel, is 0.3 inches per second (ips) peak particle velocity (PPV). Within such structures where occupants may sleep, the FTA guidance threshold for occupant response is with respect to a root-mean-square (rms) vibration velocity magnitude, expressed in decibels, of 80 vibration velocity decibels (VdB).

In the same FTA guidance manual, a daytime construction noise level threshold of 85 dBA L_{eq} over an 8-hour period (FTA 2018) is recommended guidance for the exterior of commercial land uses when local noise regulations or other quantified standards are lacking.

State of California

The California Department of Transportation (Caltrans) provides guidelines regarding vibration associated with construction and operation of transportation infrastructure, which can also be applied to construction of non-transportation projects involving the same equipment and processes. Slightly higher than the aforementioned FTA guidance-based threshold, Caltrans recommends 0.5 ips PPV as a building damage risk threshold for "new residential structures" and "modern industrial/commercial buildings" exposed to "intermittent" sources of groundborne vibration (Caltrans 2020). For occupants of those building types, Caltrans suggests a "distinctly perceptible" standard of 0.04 ips PPV, which when converted to an rms value, yields 80 VdB—akin to the FTA standard.

City of Laguna Woods

The following local regulations and guidance pertaining to noise and vibration assessment would apply to the proposed project.

General Plan Noise Element

Table N-2 from the City's General Plan Noise Element assigns an exterior noise level standard of 65 dBA Community Noise Equivalent for transient lodging, hotels, motels, and parks (City of Laguna Woods 2002). Objective III from the Noise Element is to "control non-transportation noise to avoid exposure to excessive noise levels"; and, Policy III.C from the Noise Element includes the following implementation measures: 1) adopt and enforce a Noise Ordinance for the City of Laguna Woods, 2) enforce restrictions on permitted hours of construction activity included in the Noise Ordinance, and 3) develop standardized conditions at the project level for the containment of construction noise (e.g., on-site vehicle speeds and vehicle equipment).

Municipal Code – Noise Control

Chapter 7.08 of the City's Municipal Code Section represents the effective Noise Ordinance (City of Laguna Woods 2021), which includes the following features relevant to this project impact assessment study:

- under Section 7.08.030 (Definitions), "residential property shall mean a parcel of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels."
- Section 7.08.050 designates the entire City as "Noise Zone 1", under which 7.08.060 exterior noise limits of 55 dBA during daytime hours (7:00 a.m. to 10:00 p.m.) and 50 dBA during nighttime hours (10:00 p.m. to 7:00 a.m.) would apply at all residential property.
- under Section 7.08.080.5 (Special provisions), "noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a Federal holiday."

Significance Criteria

Quantitative thresholds of significance have been established for the purposes of this impact assessment, based on relevant federal guidance, State requirements, and local polices and regulations described in the preceding paragraphs under Regulatory Setting.

- Operate construction activities outside of the City's allowable daytime construction hours (i.e., between 8 p.m. and 7 a.m.) on Mondays through Saturdays.
- Because neither the City's Noise Ordinance nor the City's General Plan features a construction noise level limit, the FTA guidance-based construction noise threshold of 85 dBA 8-hour L_{eq} at nearest off-site residences is adopted herein.
- Pump station operation noise exceeds 65 dBA Community Noise Equivalent at the City Centre Park or the exterior of the Ayres Hotel, which assuming 24/7 pump operation would mean an hourly L_{eq} of 58.3 dBA (i.e., for a continuous source of noise, and accounting for decibel (dB) adjustments during evening and nighttime hours, 6.7 dB is added to the hourly L_{eq} to derive the Community Noise Equivalent value).
- Guidance from FTA suggests groundborne vibration velocity ranging between 0.3 ips and 0.5 ips PPV might cause building damage risk to the nearby Ayres Hotel; occupants within the hotel would perceive and potentially be annoyed at 0.04 ips PPV or a rms value of 80 VdB.

As appropriate, these significance criteria are applied for project noise and vibration impact assessment to address each of three CEQA Guidelines Appendix G checklist questions that follow.

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

Less-Than-Significant Impact. The project temporary construction noise and vibration levels, construction traffic noise levels, and on-site stationary-source operation noise levels are evaluated for impact significance in the following paragraphs.

Temporary Construction Noise

Construction noise levels were estimated with a prediction model that emulates the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) and consider the types, quantities, locations, duty cycles, and durations of heavy equipment expected to operate on site. For purposes of this assessment, it was assumed that construction activity would only occur between the hours of 7 a.m. to 8 p.m. as allowed by the City. The assortment of expected construction equipment, arranged by sequential construction phase or activity, is based on information appearing in Section 2.4.2, Table 2.4-1.

Noise from construction equipment at large distances from a receptor generally exhibits point source acoustical characteristics. The maximum noise levels for the various types of project construction equipment expected on site are based on FHWA RCNM reference data and included in Appendix E. Also provided in Appendix E are FHWA RCNM "acoustical usage factors," which, in summary, are how the FHWA RCNM quantifies, based on empirical data upon which the model is based, typical operating cycles for common types of construction equipment. In other words, aside from continuously-running stationary equipment such as a generator, air-conditioner, ventilation fan, or pump, mobile heavy-construction

equipment usually operates for a brief period of time at or near full power to perform load-bearing work that is then followed by less intensive operation—the equipment engine may idle, or at low power relocate the equipment to perform work elsewhere on site. Consequently, the L_{eq} for an individual piece of construction equipment will be less than its maximum over a given period of time and reflect a dB adjustment due to its acoustical usage factor.

The nearest point of construction activity for either pump station construction or the associated pipeline installation is approximately 200 feet to the closest eastern façade of the Ayres Hotel. At such a closest distance between the project boundary and the nearest receiver, this assessment assumes that no more than one piece of each type of construction equipment per phase would be active. To consider the noise emission from all equipment on site during a project construction phase, a concept called the "acoustic center" is useful in describing time-averaged noise levels for a group of active equipment operating within a bounded geographic area. Comparable to the FTA "general assessment" technique for estimating construction noise, and particularly when exact locations of mobile equipment over a geographic zone are uncertain, the acoustic center is the idealized point from which the energy sum of all activity from the studied phase or group of equipment would originate, and it is derived by taking the arithmetic mean (i.e., average) of the sum of the shortest and longest distances between a studied receptor position and the construction area boundary (FTA 2018). In the case of the project, the geographic acoustic center is approximately 225 feet from the same Ayres Hotel façade.

Using the RCNM-emulating Excel workbook as detailed in Appendix E, the predicted noise level exposures at the nearest off-site sensitive receptor from the proposed construction activities by phase for the "nearest distance" scenario (i.e., at a distance of 200 feet) range from 62 dBA 8-hour L_{eq} for architectural coating of the station to 72.7 dBA 8-hour L_{eq} for initial site demolition work. For the "acoustic center" scenario (i.e., assessment for all phase equipment is at a distance of 225 feet to the common receptor location), noise levels would range from approximately 61 to 73.9 dBA 8-hour L_{eq} for the same quietest and loudest project construction phases. These predicted noise levels are well below, by more than 10 dB, the FTA-recommended 85 dBA 8-hour L_{eq} limit for the exterior of commercial land uses.

Predicted temporary construction noise associated with the project would be louder than the pre-existing outdoor ambient sound levels during daytime hours, as a quick comparison of the predicted levels with the measured baseline value samples of Table 3.13-1 at the same geographic locations can attest. However, these changes to the outdoor ambient sound environment are temporary, and as discussed in the preceding paragraph compliant with federal guidance; thus, construction noise impacts are anticipated to be less than significant, and no mitigation measures are required.

Temporary Construction Traffic Noise

Quantities of worker trips, vendor supply trucks, and material hauling trucks traveling to and from the project site would add volumes to the existing network of nearby roadways, including El Toro Road and Moulton Parkway. However, these roadways carry relatively much higher volumes of existing traffic during daytime hours when project construction would occur; hence, the project-attributed increase in local roadway traffic noise would be imperceptible (i.e., less than a 1% increase, which per acoustic principles, represents much less than a 1 dB change) and consequently, a less-than-significant impact.

Enduring Operational Noise

For purposes of performing a conservative quantitative prediction of noise emission from the planned operating 50-horsepower pump, the project would be located as shown in the preliminary site plan and feature a partially walled (to retain slopes) and open design. The height of the wall would be slightly higher than the excavated hillside to the north, and there would be an open ventilation port to the south. Using a conservative reference noise level of 77 dBA L_{max} at 50 feet (FHWA 2006) for the operating pump, Figure3.13-2 displays its predicted noise propagation, with levels at the eastern boundary of the City Centre Park and eastern facades of the Ayres Hotel and office building to the south that do not exceed 50 dBA and are thus compliant with City thresholds. Therefore, noise from operation of on-site stationary equipment is anticipated to be a less-than-significant impact.

After construction, the operating project pump station would have little or no enduring effect on the traffic of local roadways; hence, this potential impact would be considered less than significant.

Enduring Operational Vibration

Long-life operation of electro-mechanical equipment like the project's planned pump depends on well-balanced rotating or reciprocating componentry that are designed to exhibit very low levels of vibration that meet manufacturer and industry tolerances. Aside from consideration of vibration isolation means that the pump may feature internally or as part of its connection to the pump station structure and piping, groundborne vibration emission from the new pump station would be much less than those levels studied herein for construction activities and would therefore be considered a less-than-significant impact.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less-Than-Significant Impact. For construction vibration, this analysis refers to Caltrans guidance for assessing potential annoyance of persons within nearby occupied structures, and the risk of building façade or other potential damage. As mentioned in the significance criteria, these are 0.3 ips PPV for residential building damage risk and 80 VdB for human occupant annoyance, respectively. During project demolition phase, operating heavy construction equipment such excavators, backhoes, front-end loaders, and dozers all share—according to FTA guidance—the same reference vibration level of 0.089 ips PPV; hence, at a closest possible distance of 200 feet to the Ayres Hotel, the predicted groundborne vibration velocity from such equipment using FTA methodology (FTA 2018) would be less than 0.004 ips PPV and less than 60 VdB rms vibration velocity and thus compliant with these assessment criteria. During project on-site paving, the expected vibratory roller has a higher reference vibration velocity value of 0.21 ips PPV (and rms value of 94 VdB). At the same closest possible assessment distance of 200 feet, the corresponding receiver groundborne vibration velocity exposures would be 0.01 ips PPV and 67 VdB. Again, these values are less than the established assessment criteria adopted herein. Based on these quantitative estimates, anticipated groundborne vibration impacts during project construction would be considered less than significant.

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?***

Less-Than-Significant Impact. There are no private airstrips or public airports within 2 miles of the vicinity of the project site. Impacts from aviation overflight noise exposure would be considered less than significant.

3.14 Population and Housing

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

a) ***Would the project 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)?***

Less-Than-Significant Impact. The project involves constructing a pump station at the existing ETWD R-1/R-2 Reservoir Site. Currently, flow into R-1 and R-2 varies depending on the water levels within R-1 and R-2 and on JTM supply pressure. The grade of the site does not currently allow for water to flow directly from the JTM into the HGL. The proposed project would allow water to be pumped directly from the JTM into the HGL. As such, the project is intended to meet current water demands for the current service area and would not include a component that would generate population growth, and as such, would not be considered growth inducing. Therefore, impacts associated with substantial unplanned population growth would be less than significant.

b) ***Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?***

No Impact. The project would be located at ETWD's R-1/R-2 Reservoir Site. As such, no housing currently exists on the project site. Therefore, housing would not be displaced, and no impact would occur.

3.15 Public Services

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

a) ***Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:***

Fire protection?

Less-Than-Significant Impact.. The project consists of improvements to the existing ETWD R-1/R-2 Reservoir Site. The project would not induce population growth nor result in the addition of housing, schools, or other community facilities that might require fire protection (see Section 3.14[a], Population and Housing). The construction of the proposed pump station would not change local fire protection response times or significantly affect demand for fire protection services in the project area. During the construction phase of the proposed project, the associated construction-related activities would result in a less-than-significant increase in need for emergency fire protection services. However, due to the limited number of construction workers and the duration of the construction schedule, impacts to fire protection services are considered less than significant.

Police protection?

No Impact. The project is limited to the construction of a pump station at an existing reservoir site. The project would not include the addition of housing, schools, or other community facilities that might require police protection. The project would also not indirectly induce additional housing, schools, or other community facilities (see Section 3.14[a]). Construction of the pump station would not change local police protection response times or affect demand for police protection services in the project area.

Schools?

No Impact. The project would not involve a housing component that would result in population growth and increased demands on existing school within the area. Therefore, no impact to schools would occur.

Parks?

No Impact. The project would not involve a housing component or increase employment that would result in population growth necessitating the need for additional parks or increase the use of nearby parks. Therefore, no impacts to parks would occur.

Other public facilities?

No Impact. The project would not involve a housing component or increase employment opportunities that would result in population growth within the City. Therefore, additional demands on other public facilities, such as library or health care services, would not occur as a result of project implementation and no impact would occur.

3.16 Recreation

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION				
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?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

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

No Impact. The proposed project would not involve a housing component or substantially increase employment opportunities within the area; thus, the project would not increase the use of existing neighborhood and regional parks or other recreational facilities. No impact would occur.

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

No Impact. The proposed project would not include recreational facilities. Additionally, the proposed project would not affect existing recreational resources or require the need for new or expanded recreational facilities. Therefore, no impact would occur.

3.17 Transportation

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

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

Less-Than-Significant Impact. Construction of the proposed project would generate traffic during the 4-month construction phase. This traffic would include construction vehicles, workers' vehicles, and supply trucks carrying equipment and ready-mixed concrete trucks the project site. Construction activity would add between approximately 6 to 38 vehicle trips per day during the construction period and would not be substantial in terms of traffic load and capacity.

Once operational, the project would be unmanned, would generate only intermittent operations and maintenance vehicle trips, and would not introduce an incompatible use onto the local circulation system. Given the project's nominal trip generation over the course of the year, the project would not result in any impacts to the circulation system. Additionally, the project does not involve any activities that would conflict with non-vehicular modes of transportation. Impacts due to operation of the project would therefore be less than significant.

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

No Impact. CEQA Guidelines Section 15064.3 subdivision (b) sets forth specific criteria for determining the significance of transportation impacts. Subdivision (b) pertains to land use projects and describes factors that may indicate whether the amount of a land use project's vehicle miles traveled may be significant or not.

Project-related traffic would be limited predominantly to a relatively small number of temporary trips during the construction period and an occasional trip for maintenance purposes. Because the project is not a land use project and would not generate substantial vehicle miles traveled, the project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) and no impact would result.

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

No Impact. The proposed project would use existing roadways and would not involve permanent alteration of existing roadways, nor would it require incompatible vehicular access. Therefore, the project would have no impact related to an increase in hazards due to a design feature or incompatible use.

d) Would the project result in inadequate emergency access?

No Impact. The proposed project would result in the construction of a pump station within ETWD's existing R-1/R-2 Reservoir Site. The project would not involve modifications to access points and would therefore have no impact with regard to inadequate emergency access.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) 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	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

The evaluation of potential impacts to Tribal Cultural Resources (TCRs) is based on the findings resulting from tribal consultation conducted by ETWD, as the lead agency, as well as the findings of the Negative Cultural Resources Inventory Report prepared by Dudek in 2022 (Appendix C). Background research conducted to inform this analysis include the results of a California Historical Resources Information System records search conducted at SCCIC, results of the Sacred Lands File search conducted at NAHC and the results of formal tribal consultation completed by the lead agency, ETWD, pursuant to California AB 52, all of which are briefly provided in this section.

Assembly Bill 52 Consultation

The project is subject to compliance with AB 52 (PRC 21074), which requires consideration of impacts to TCRs as part of the CEQA process, and that the lead agency notify California Native American Tribal representatives (that have requested notification) who are traditionally or culturally affiliated with the geographic area of the proposed project. All NAHC-listed California Native American Tribal representatives that have requested project notification pursuant to AB 52 were sent letters by ETWD on January 18, 2022, via USPS certified mailing and email. The notification letters contained a project description, outline of AB 52 timing, an invitation to consult, a project site plan, and contact information for the appropriate lead agency representative. To date, government-to-government consultation initiated by the ETWD has not resulted in the identification of a TCR within or near the proposed project site. Table 3.18-1 summarizes the results of the AB 52 process for the project. The confidential AB 52 consultation results are on file with ETWD.

Table 3.18-1. Assembly Bill 52 Native American Heritage Commission–Listed Native American Contacts

Native American Tribal Representatives	Method and Date of Notification	Response to City Notification Letters	Consultation Date
Ms. Sandonne Goad Chairperson Gabrieleño/Tongva Nation	USPS certified mailing and email	No response has been received to date.	N/A
Ms. Sonia Johnston Tribal Chairperson Juaneño Band of Mission Indians	USPS certified mailing and email	No response has been received to date.	N/A
Matias Belardes Chairperson Juaneño Band of Mission Indians Acjachemen Nation	USPS certified mailing and email	No response has been received to date.	N/A
Mr. Anthony Morales Chairperson Gabrieleño/Tongva San Gabriel Band of Mission Indians	USPS certified mailing and email	No response has been received to date.	N/A
Ms. Joyce Perry Representing Tribal Chairperson Juaneño Band of Mission Indians Acjachemen Nation	USPS certified mailing and email	▪ Requested consultation and expressed initial concerns about the project.	Via email between January 18, 2022 and April 12, 2022

Table 3.18-1. Assembly Bill 52 Native American Heritage Commission–Listed Native American Contacts

Native American Tribal Representatives	Method and Date of Notification	Response to City Notification Letters	Consultation Date
		▪ After further discussion with ETWD staff, Ms. Perry indicated the tribe did not have any concerns about the project.	
Ms. Teresa Romero Chairwoman Juaneño Band of Mission Indians Acjachemen Nation	USPS certified mailing and email	No response has been received to date.	N/A
Mr. Andrew Salas Chairperson Gabrieleño Band of Mission Indians – Kizh Nation	USPS certified mailing and email	▪ Requested AB 52 consultation ▪ During consultation, the tribe stated that the project would have an adverse impact on Kizh historical landscapes, ceremonial places, subsurface artifacts, and other Kizh tribal cultural resources. Mitigation measures were requested to reduce impacts. Additional details provided in impact discussion.	Consultation began on March 24, 2022 via a telephone call; consultation is ongoing.

Regulatory Context

California State Assembly Bill 52

AB 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that tribal cultural resources must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. PRC Section 21074 describes a tribal cultural resource as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe. A tribal cultural resource is either:

- On the CRHR or a local historic register
- Eligible for the CRHR or a local historic register
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in division (c) of PRC Section 5024.1

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project area, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report by contacting those tribal groups who have previously provided formal written request for notification of projects under the agency's jurisdiction.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on TCRs should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to TCRs, the consultation shall include those topics (PRC Section 21080.3.2[a]). Finally, the environmental document, for which the tribal consultation is focused, and the mitigation monitoring and reporting program (where applicable), developed in consideration of information provided by tribes during the formal consultation process, shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the county coroner has examined the remains (Health and Safety Code Section 7050.5[b]). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the county coroner determines or has reason to believe the remains are those of a Native American, the county coroner must contact the NAHC within 24 hours (Health and Safety Code Section 7050.5[c]). The NAHC will notify the most likely descendant. With the permission of the landowner, the most likely descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the most likely descendant by the NAHC. The most likely descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

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

a) 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)?

Less Than Significant Impact With Mitigation Incorporated. As discussed in Section 3.5, Cultural Resources, a records search of the project APE and a 0.5-mile buffer around the proposed project APE was requested by Dudek staff from the SCCIC on December 9, 2021. These records indicate that no cultural resources have been recorded within the project APE. A total of two previously recorded resources were identified within the surrounding 0.5-mile buffer: a prehistoric campsite (P-30-00610/P-30-000610) and a historic church (P-30-177526). The closest resource to the project APE is P-30-00610/CA-ORA-000610, a

prehistoric campsite located immediately adjacent and north of the project APE. P-30-00610/CA-ORA-000610 is noted as being totally destroyed due to the grading activities for the installation of the water tanks and nursery terracing. The proposed current project would not impact (direct or indirect) CA-ORA-000610 or P-30-177526.

Nonetheless, there is potential for inadvertent discovery of TCRs during ground-disturbing construction activities. MM-CUL-1 would be implemented during construction in the event of an inadvertent discovery of archaeological resources and TCRs to allow for assessment and evaluation of the resources. Furthermore, MM-CUL-2 contains protocol to be implemented should construction activities uncover human remains. As such, impacts to TCRs eligible for listing in CRHR would be less than significant with mitigation incorporated.

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

Less Than Significant Impact With Mitigation Incorporated. TCRs include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Native American tribe. TCRs include "non-unique archaeological resources" that, instead of being important for "scientific" value as a resource, can also be significant because of the sacred and/or cultural tribal value of the resource. Tribal representatives are considered experts appropriate for providing substantial evidence regarding the locations, types, and significance of tribal cultural resources within their traditionally and culturally affiliated geographic area (PRC 21080.3.1[a]).

No known TCRs have been identified in the project site through previous archeological investigations, site reconnaissance or in consultation with tribes that are traditionally and cultural affiliated with the project area. During the AB 52 tribal consultation process, two tribes requested consultation with ETWD: The Juaneño Band of Mission Indians Acjachemen Nation and the Gabrieleño Band of Mission Indians – Kizh Nation. ETWD consulted with both tribes, as detailed in Table 3.18-1. During consultation, Ms. Joyce Perry, representing the Juaneño Band of Mission Indians Acjachemen Nation, indicated that the tribe did not have any concerns with the project after reviewing the project materials. Mr. Andrew Salas, representing Gabrieleño Band of Mission Indians – Kizh Nation, indicated that the tribe had concerns with the project. During consultation, the tribe stated that the project would have an adverse impact on Kizh historical landscapes, ceremonial places, subsurface artifacts, and other Kizh tribal cultural resources. Mitigation measures were requested to reduce impacts. Mr. Salas referenced confidential information, including Kizh oral history, elder testimony, testimony by a Kizh archaeologist, John Torres, data on Native American discoveries in the region, historical information on Kizh cultural and historical uses of the area surrounding the project site, historical maps, and historical literature. However, the tribe has not yet identified specific TCRs on the project site that would be impacted by the project. Given this understanding of the site conditions as detailed below, it is ETWD's preliminary understanding that the project would not result in significant impacts to a TCR pursuant to subdivision (c) of Public Resources Code Section 5024.1:

- While ETWD recognizes that the project was located in an area that may have once been inhabited by the Gabrieleño Band of Mission Indians – Kizh Nation, which is supported by confidential information provided by the tribe during the AB 52 process, no specific TCRs were identified on the project site.
- As detailed in Section 3.5, Cultural Resources, as well as in the Phase I Cultural Resources Inventory Report (Appendix C), the project site has been subject to a high level of disturbance

associated with the construction of the water tanks, access road, and landscaping and irritation associated with ETWD's R-1/R-2 Reservoir Site. These disturbances are documented to have removed any potential resources that may have been previously been present on site. These previous activities graded the project site to bedrock and less than one foot of remaining road base overlies bedrock. Previous grading activities removed approximately 15-20 feet of soils.

- At present, it appears that MM-CUL-1 and MM-CUL-2 would adequately address the potential, although unlikely, discovery of unanticipated buried and unknown TCRs. Nonetheless, at present, tribal consultation is still ongoing. Should substantial evidence pertaining to the identification of TCRs be raised during future consultation, additional management recommendations may be required.

At present, with the implementation of mitigation measures MM-CUL-1 and MM-CUL-2, impacts to unknown TCRs would be reduced to a less-than-significant level.

3.19 Utilities and Service Systems

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

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

Less-Than-Significant Impact. The project involves the construction of a new pump station system within existing ETWD easements. However, any potential environmental impacts related to installation of new water facilities are already accounted for in this IS/MND as part of the impact assessment conducted for the entirety of the proposed project. No adverse physical effects beyond those already disclosed in this IS/MND would occur as a result of installation of new water facilities. As such, impacts associated with the installation of new water facilities would be less than significant.

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

Less-Than-Significant Impact. During construction, water usage would be temporary and minimal for watering the project site and other needs. Once operational, the project itself would not increase the use of supplies as the project would primarily enhance the existing facility's ability to supply existing maximum daily water demands. As such, the proposed project would not require new or additional sources of water, and impacts associated with water supplies would be less than significant.

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

Less-Than-Significant Impact. The project would not result in an increase of wastewater treatment demands as the project would primarily enhance the existing facility's ability to supply existing water demands. The project itself would not directly or indirectly increase wastewater treatment demands, and impacts associated with wastewater treatment would be less than significant.

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less-Than-Significant Impact. Waste generation and disposal requirements associated with the proposed project would be limited to minor quantities derived from construction activities (e.g., material packaging) and employees (e.g., food-related trash). Solid waste from the project would be disposed of at the County's Prima Deshecha Landfill south of the project site near San Juan Capistrano. The Prima Deshecha Landfill has a remaining capacity of 134,300,000 cubic yards and a maximum permitted throughput of 4,000 tons per day (CalRecycle 2019). Therefore, given the minimal waste that would be produced by the project and the remaining capacity and permitted throughput of Prima Deshecha Landfill, it is anticipated that the landfill would have sufficient capacity to accommodate the minimal amount of project-related waste. Associated potential impacts from project implementation would be less than significant.

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact. Construction and operation of the proposed project would generate minimal solid waste and would not affect landfill capacity. During construction of the project, construction debris (e.g., excavated

soil, asphalt) would be generated. Solid waste debris would be disposed of at a permitted landfill. Moreover, AB 939, also known as the Integrated Waste Management Act, mandates the reduction of solid waste disposal in landfills by requiring a minimum of 50% diversion rate. Accordingly, at least half of the potential construction waste would be diverted from a landfill serving the project area. Therefore, no impact related to solid waste would occur.

3.20 Wildfire

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

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The project is not located within a Fire Hazard Severity Zone or a Very High Hazard Severity Zone according to the Local Responsibility and State Responsibility Area maps by the California Department of Forestry and Fire Protection (CAL FIRE) (CAL FIRE 2011; City of Laguna Woods 2002). In addition, the project site is currently developed with existing ETWD uses and is located in a developed portion of the City. As discussed in Section 3.9, Hazards and Hazardous Materials, the project would not affect emergency response or evaluation activities. Therefore, no impacts associated with an emergency response or evacuation plan would occur.

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

Less-Than-Significant Impact. The project is not located within a Fire Hazard Severity Zone or a Very High Hazard Severity Zone according to the Local Responsibility and State Responsibility Area maps by CAL FIRE (CAL FIRE 2011; City of Laguna Woods 2002). In addition, the project site is currently developed with existing ETWD uses and is located in a developed portion of the City. Due to the location of the project site in the context of the surrounding area and the fact that the project involves the pump station on a water reservoir site, the project would not exacerbate wildfire risks or expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Therefore, impacts associated with wildfire would be less than significant.

c) Would the project 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?

No Impact. The project is not located within a Fire Hazard Severity Zone or a Very High Hazard Severity Zone according to the Local Responsibility and State Responsibility Area maps by CAL FIRE (CAL FIRE 2011; City of Laguna Woods 2002). In addition, the project site is currently developed with existing ETWD uses and is located in a developed portion of the City. The project would construct a pump station and associated piping. The project would not require installation or maintenance of other associated infrastructure such as fuel breaks, power lines, or other utilities that would exacerbate fire risk. As such, the project would not expose people or structures to significant risk involving wildland fires, exacerbate wildfire risks, or otherwise result in wildfire-related impacts. Therefore, no impacts associated with wildfire would occur.

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

No Impact. The project is not located within a Fire Hazard Severity Zone or a Very High Hazard Severity Zone according to the Local Responsibility and State Responsibility Area maps by CAL FIRE (CAL FIRE 2011; City of Laguna Woods 2002). The project would construct a pump station and associated piping fully within ETWD's existing R-1/R-2 Reservoir Site. While the project may result in modifications to the hillside slope within the site, the project would involve the stabilization of this slope by either backfilling it or providing permanent shoring. As such, any changes to the topography would be nominal and would not have any substantial effect on downslope conditions were a fire to occur. Therefore, no impacts associated with wildfire would occur.

3.21 Mandatory Findings of Significance

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

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

Less-Than-Significant With Mitigation Incorporated. As described throughout this IS/MND, with the incorporation of the identified mitigation measures, the project would not degrade the quality of the environment; would not substantially reduce the habitats of fish or wildlife species, would not cause a fish or wildlife population to drop below self-sustaining levels, would not threaten to eliminate a plant or animal, and would not eliminate important examples of major periods of California history or prehistory. Therefore, impacts would be less than significant with mitigation incorporated.

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

Less-Than-Significant With Mitigation Incorporated. When evaluating cumulative impacts, it is important to remain consistent with Section 15064(h) of the CEQA Guidelines, which states that an EIR must be prepared if the cumulative impact may be significant and the project's incremental effect, though individually limited, is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Alternatively, a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable through mitigation measures set forth in an MND or if the project will comply with the requirements in a previously approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located.

The proposed project would potentially result in project related biological, cultural, and tribal cultural, and geological impacts that could be potentially significant without the incorporation of mitigation. Thus, when coupled with biological, cultural and tribal cultural, and geological impacts related to the implementation of other related projects throughout the broader project area, the project would potentially result in cumulative-level impacts if these significant impacts are left unmitigated.

However, with the incorporation of mitigation identified herein, the project's impacts to biological resources, cultural and tribal cultural resources, and geological resources would be reduced to less-than-significant levels and would not considerably contribute to cumulative impacts in the greater project region. In addition, these other related projects would presumably be bound by their applicable lead agency to (1) comply with all applicable federal, state, and local regulatory requirements; and (2) incorporate all feasible mitigation measures, consistent with CEQA, to further ensure that their potentially cumulative impacts would be reduced to less-than-significant levels.

Although cumulative impacts are always possible, the project, by incorporating all mitigation measures outlined herein, would reduce its contribution to any such cumulative impacts to less than cumulatively considerable; therefore, the project would result in individually limited, but not cumulatively considerable, less-than-significant impacts with mitigation incorporated.

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

Less-Than-Significant With Mitigation Incorporated. As evaluated throughout this IS/MND, with incorporation of mitigation identified herein, all environmental impacts associated with the project would be reduced to less-than-significant levels. Thus, the project would not directly or indirectly cause substantial adverse effects on human beings. Impacts would be less than significant with mitigation incorporated.

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4 References and Preparers

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4.2 List of Preparers

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Dudek

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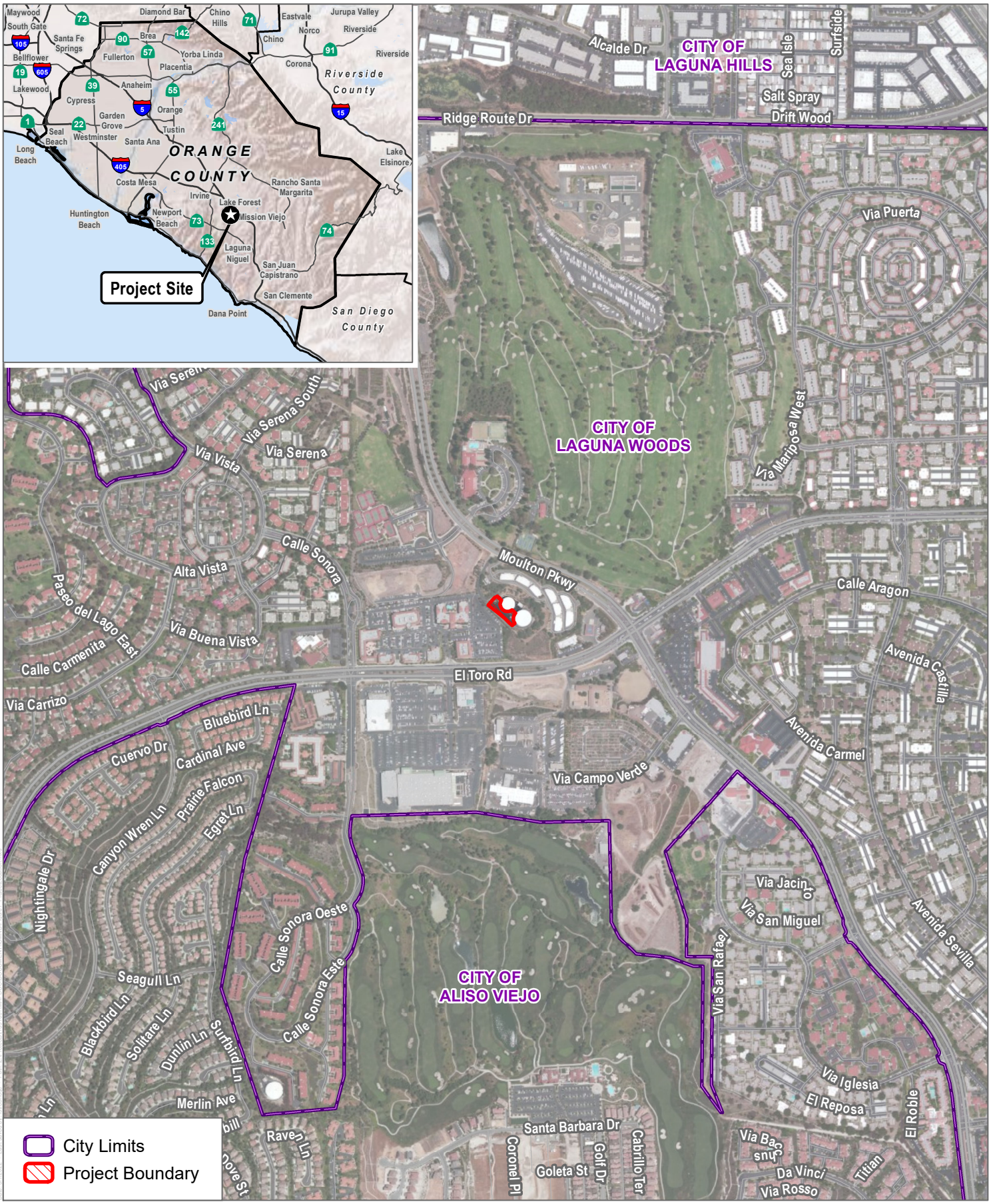

SOURCE: Esri Clarity Basemap, OpenStreetMap

DUDEK

0 500 1,000 Feet

FIGURE 1

Project Location

El Toro Water District Joint Transmission Main Pump Station Project

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SOURCE: Esri Clarity Basemap, OpenStreetMap

DUDEK

0 50 100 Feet

FIGURE 2

Aerial Overview

El Toro Water District Joint Transmission Main Pump Station Project

INTENTIONALLY LEFT BLANK

SOURCE: Esri Clarity Basemap, OpenStreetMap

DUDEK

0 30 60 Feet

FIGURE 3

Existing Facility

El Toro Water District Joint Transmission Main Pump Station Project

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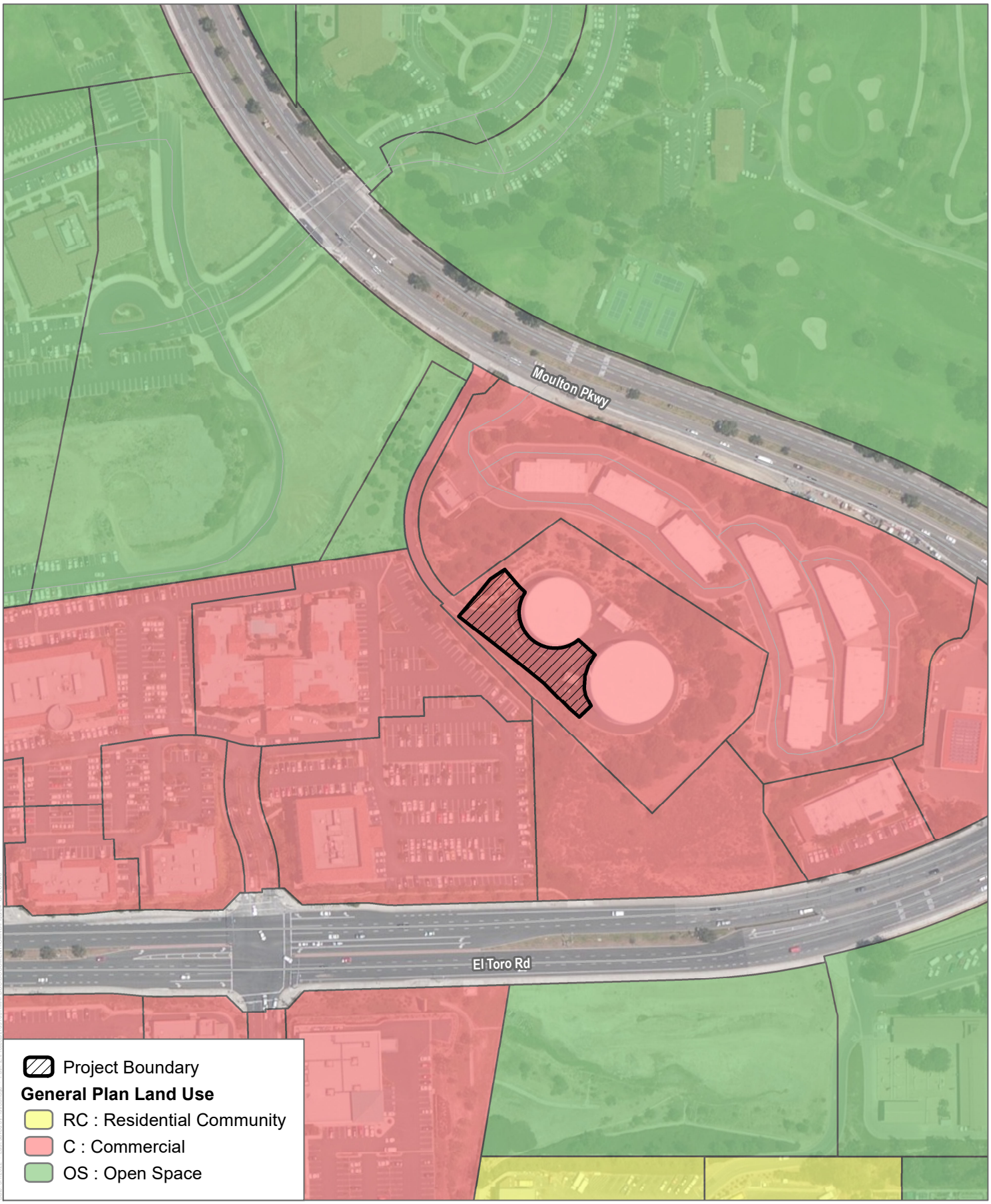


SOURCE: Esri Clarity Basemap, OpenStreetMap, City of Laguna Woods

DUDEK

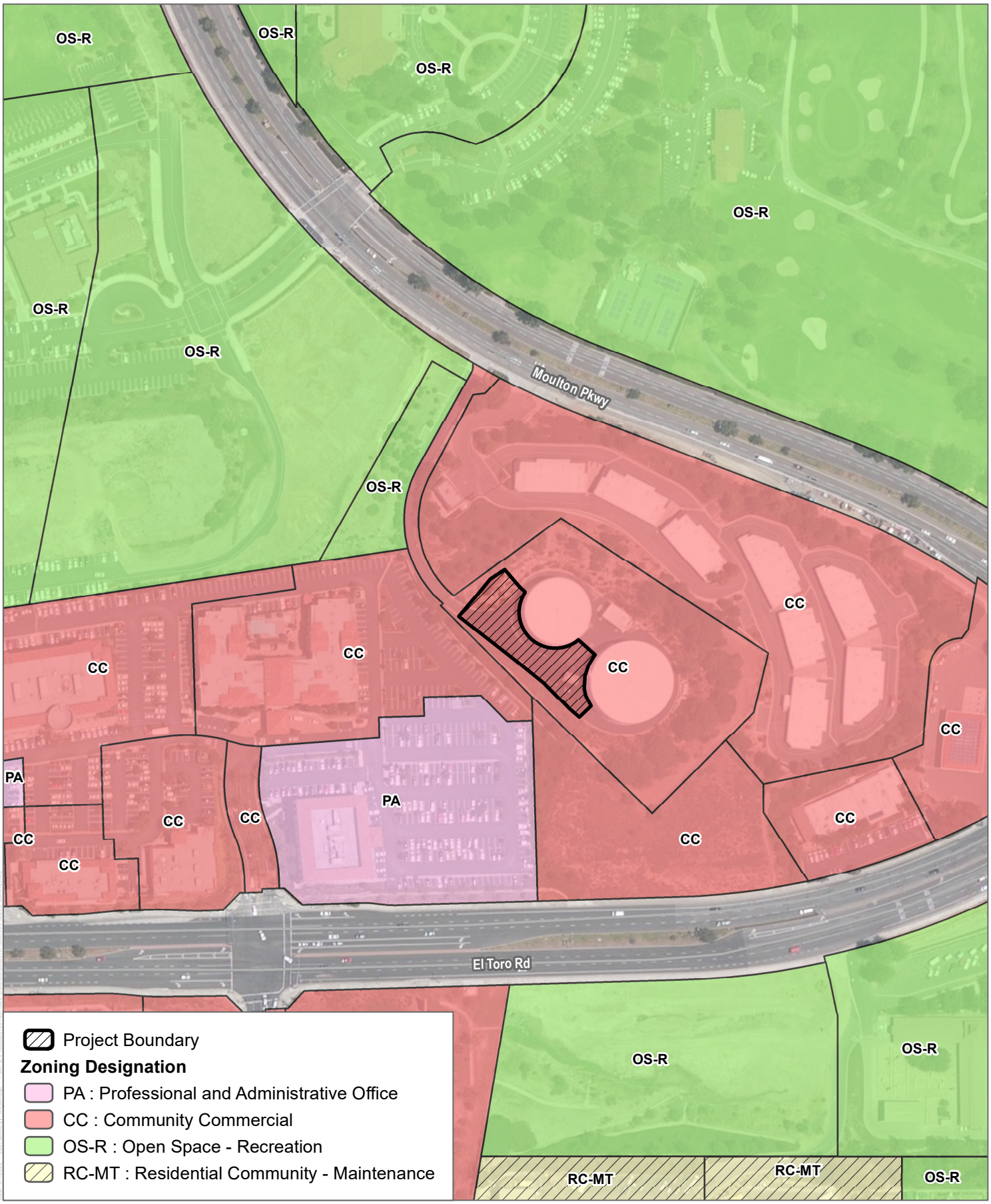
0 100 200 Feet

FIGURE 4

General Plan Land Use

El Toro Water District Joint Transmission Main Pump Station Project

INTENTIONALLY LEFT BLANK



SOURCE: Esri Clarity Basemap, OpenStreetMap, City of Laguna Woods

DUDEK

0 100 200 Feet

FIGURE 5

Zoning

El Toro Water District Joint Transmission Main Pump Station Project

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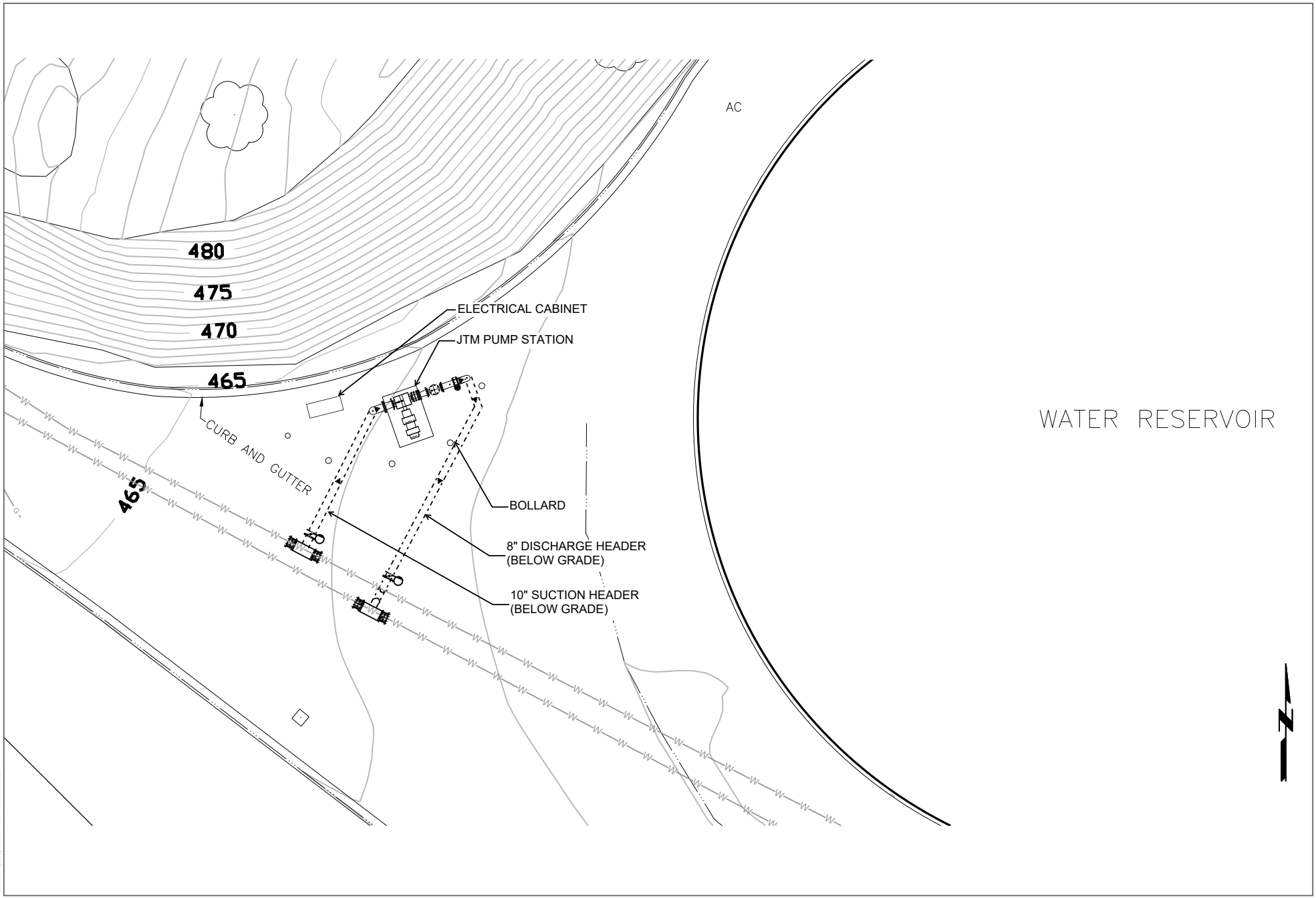


SOURCE: Black & Veatch 2022

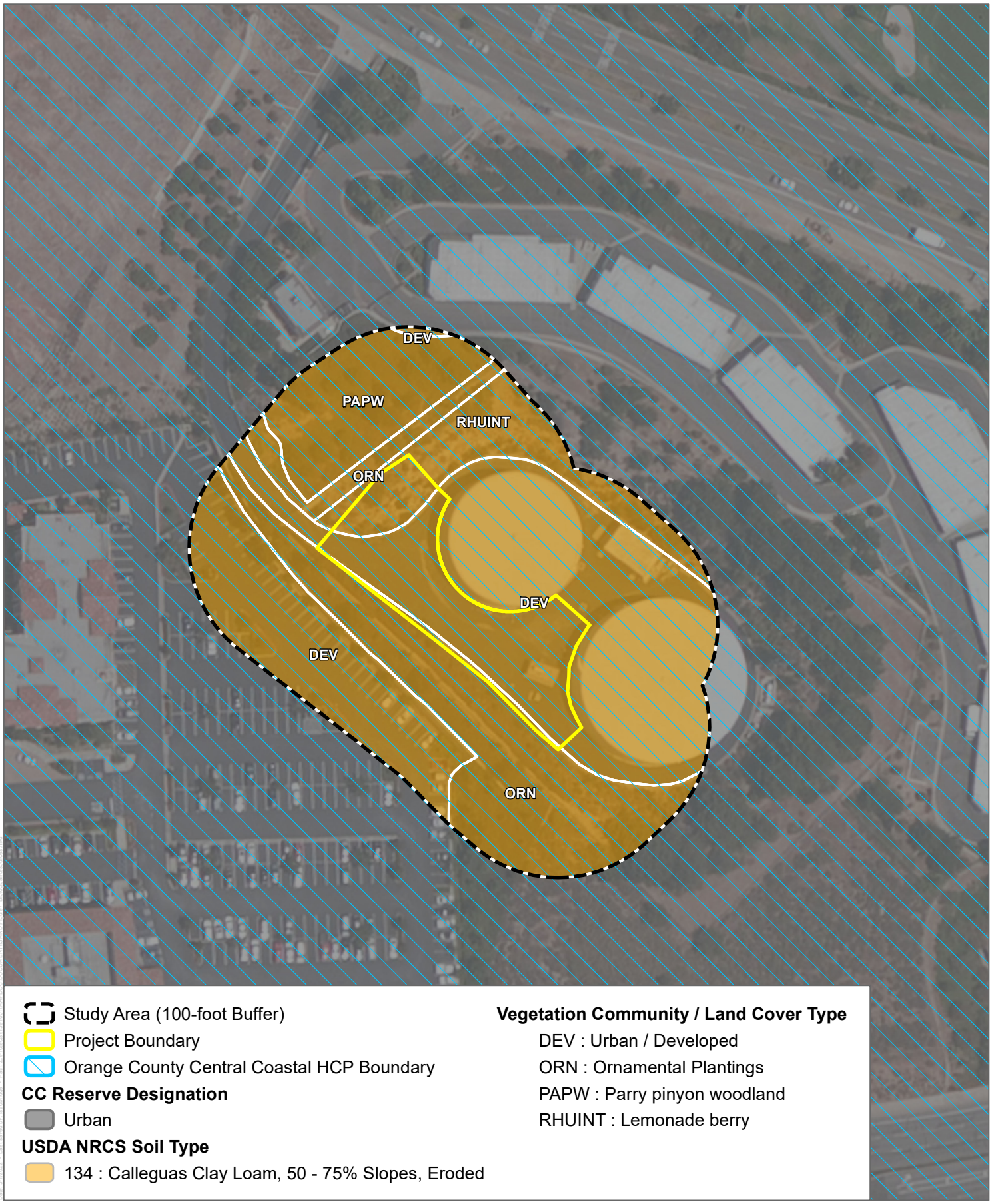
FIGURE 6

Preliminary Site Plan

El Toro Water District Joint Transmission Main Pump Station Project

DUDEK

INTENTIONALLY LEFT BLANIK



SOURCE: Esri Clarity Basemap, OpenStreetMap, Natural Communities Coalition, USDA

DUDEK

0 50 100 Feet

FIGURE 7

Biological Resources

El Toro Water District Joint Transmission Main Pump Station Project

INTENTIONALLY LEFT BLANK

SOURCE: Esri Clarity Basemap, OpenStreetMap

DUDEK

0 60 120 Feet

FIGURE 8

Baseline Outdoor Ambient Sound Level Survey Positions

El Toro Water District Joint Transmission Main Pump Station Project

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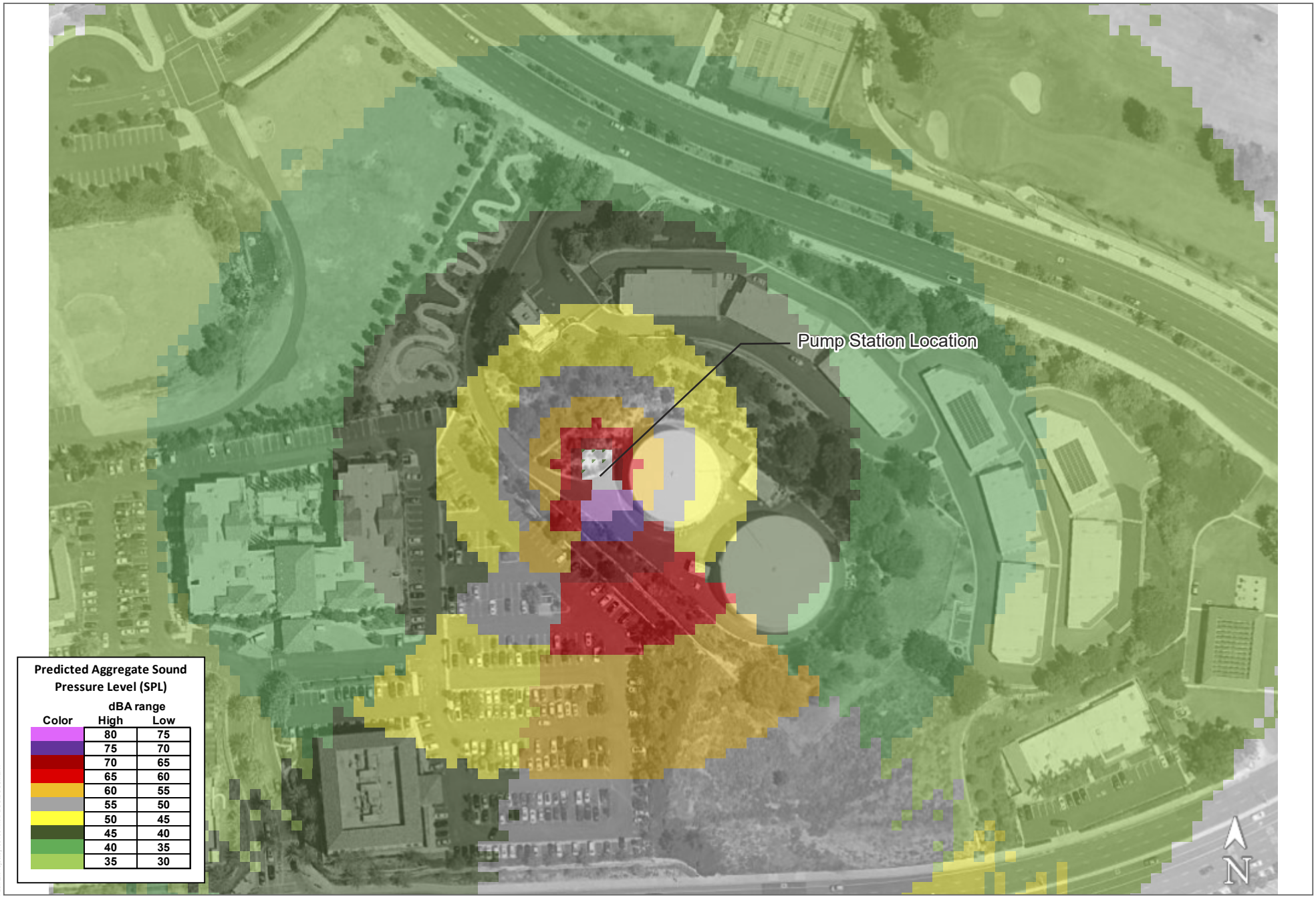

SOURCE: Google Earth 2022, Dudek 2022

DUDEK

FIGURE 9

Predicted Pump Noise Emission from Station Building

El Toro Water District Joint Transmission Main Pump Station Project

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Appendix A
CalEEMod Output Files

Joint Transmission Main Pump Station - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Joint Transmission Main Pump Station

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.54	1000sqft	0.01	540.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction Start in 2022.

Land Use - 540 square foot development footprint

Construction Phase - Construction Schedule provided by the project applicant.

Off-road Equipment - Construction equipment information provided by the project applicant.

Off-road Equipment - Construction equipment information provided by the project applicant.

Off-road Equipment - Construction equipment information provided by the project applicant.

Off-road Equipment - No Heavy Equipment for Mobilzation Phase.

Off-road Equipment - Construction equipment information provided by the project applicant.

Off-road Equipment - Construction equipment information provided by the project applicant.

Trips and VMT - construction trip information was provided by the project applicant.

Grading - CalEEMod defaults.

Architectural Coating - CalEEMod defaults.

Joint Transmission Main Pump Station - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area Coating - CalEEMod defaults.

Construction Off-road Equipment Mitigation - Complaince with SCAQMD Rule 403

Fleet Mix - CalEEMod defaults.

Off-road Equipment - Construction equipment information provided by the project applicant.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	5.00	12.00
tblConstructionPhase	NumDays	100.00	33.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	23.00
tblConstructionPhase	NumDays	5.00	12.00
tblConstructionPhase	NumDays	1.00	5.00
tblConstructionPhase	NumDays	1.00	10.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Building Construction

Joint Transmission Main Pump Station - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	22.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	13.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	15.00	12.00
tblTripsAndVMT	WorkerTripNumber	13.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	16.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblTripsAndVMT	WorkerTripNumber	0.00	4.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0690	0.6186	0.6665	1.1700e-003	0.0148	0.0296	0.0444	2.8300e-003	0.0278	0.0306	0.0000	101.7511	101.7511	0.0246	7.8000e-004	102.5976
Maximum	**0.0690**	**0.6186**	**0.6665**	**1.1700e-003**	**0.0148**	**0.0296**	**0.0444**	**2.8300e-003**	**0.0278**	**0.0306**	**0.0000**	**101.7511**	**101.7511**	**0.0246**	**7.8000e-004**	**102.5976**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0690	0.6186	0.6665	1.1700e-003	0.0109	0.0296	0.0405	2.4000e-003	0.0278	0.0302	0.0000	101.7510	101.7510	0.0246	7.8000e-004	102.5975
Maximum	**0.0690**	**0.6186**	**0.6665**	**1.1700e-003**	**0.0109**	**0.0296**	**0.0405**	**2.4000e-003**	**0.0278**	**0.0302**	**0.0000**	**101.7510**	**101.7510**	**0.0246**	**7.8000e-004**	**102.5975**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**26.77**	**0.00**	**8.94**	**15.19**	**0.00**	**1.40**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**4-24-2022**	**7-23-2022**	0.2166	0.2166
3	**7-24-2022**	**9-30-2022**	0.4516	0.4516
		Highest	0.4516	0.4516

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0000e-005	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0000e-005	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilzation	Site Preparation	6/1/2022	6/7/2022	5	5	
2	Demolition	Demolition	6/8/2022	6/14/2022	5	5	
3	Site Preparation	Site Preparation	6/15/2022	6/28/2022	5	10	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Grading	Grading	6/29/2022	7/29/2022	5	23	
5	Paving	Paving	8/1/2022	8/16/2022	5	12	
6	Building Construction	Building Construction	8/17/2022	9/30/2022	5	33	
7	Architectural Coating	Architectural Coating	9/15/2022	9/30/2022	5	12	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 8.63

Acres of Paving: 0.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 32 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Mobilzation	Graders	0	0.00	187	0.41
Mobilzation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	6.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	2	7.00	130	0.42
Paving	Paving Equipment	1	7.00	132	0.36
Paving	Rollers	2	7.00	80	0.38
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Mobilzation	0	6.00	4.00	6.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	8.00	4.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	12.00	4.00	22.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	6.00	4.00	6.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	12.00	4.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	16.00	2.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Joint Transmission Main Pump Station - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Mobilzation - 2022

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.9000e-004	1.1000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1807	0.1807	1.0000e-005	3.0000e-005	0.1895
Vendor	2.0000e-005	4.9000e-004	1.6000e-004	0.0000	6.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1866	0.1866	1.0000e-005	3.0000e-005	0.1949
Worker	5.0000e-005	4.0000e-005	5.3000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1331	0.1331	0.0000	0.0000	0.1342
Total	**8.0000e-005**	**1.0200e-003**	**8.0000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.5004**	**0.5004**	**2.0000e-005**	**6.0000e-005**	**0.5186**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Mobilzation - 2022

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.9000e-004	1.1000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1807	0.1807	1.0000e-005	3.0000e-005	0.1895
Vendor	2.0000e-005	4.9000e-004	1.6000e-004	0.0000	6.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1866	0.1866	1.0000e-005	3.0000e-005	0.1949
Worker	5.0000e-005	4.0000e-005	5.3000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1331	0.1331	0.0000	0.0000	0.1342
Total	**8.0000e-005**	**1.0200e-003**	**8.0000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.5004**	**0.5004**	**2.0000e-005**	**6.0000e-005**	**0.5186**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.7000e-003	0.0444	0.0385	7.0000e-005		2.2400e-003	2.2400e-003		2.1300e-003	2.1300e-003	0.0000	5.9304	5.9304	1.2000e-003	0.0000	5.9602
Total	**4.7000e-003**	**0.0444**	**0.0385**	**7.0000e-005**		**2.2400e-003**	**2.2400e-003**		**2.1300e-003**	**2.1300e-003**	**0.0000**	**5.9304**	**5.9304**	**1.2000e-003**	**0.0000**	**5.9602**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.9000e-004	1.1000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1807	0.1807	1.0000e-005	3.0000e-005	0.1895
Vendor	2.0000e-005	4.9000e-004	1.6000e-004	0.0000	6.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1866	0.1866	1.0000e-005	3.0000e-005	0.1949
Worker	5.0000e-005	4.0000e-005	5.3000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1331	0.1331	0.0000	0.0000	0.1342
Total	**8.0000e-005**	**1.0200e-003**	**8.0000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.5004**	**0.5004**	**2.0000e-005**	**6.0000e-005**	**0.5186**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Demolition - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.7000e-003	0.0444	0.0385	7.0000e-005		2.2400e-003	2.2400e-003		2.1300e-003	2.1300e-003	0.0000	5.9304	5.9304	1.2000e-003	0.0000	5.9602
Total	**4.7000e-003**	**0.0444**	**0.0385**	**7.0000e-005**		**2.2400e-003**	**2.2400e-003**		**2.1300e-003**	**2.1300e-003**	**0.0000**	**5.9304**	**5.9304**	**1.2000e-003**	**0.0000**	**5.9602**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.9000e-004	1.1000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1807	0.1807	1.0000e-005	3.0000e-005	0.1895
Vendor	2.0000e-005	4.9000e-004	1.6000e-004	0.0000	6.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1866	0.1866	1.0000e-005	3.0000e-005	0.1949
Worker	5.0000e-005	4.0000e-005	5.3000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1331	0.1331	0.0000	0.0000	0.1342
Total	**8.0000e-005**	**1.0200e-003**	**8.0000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.5004**	**0.5004**	**2.0000e-005**	**6.0000e-005**	**0.5186**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6500e-003	0.0000	2.6500e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-003	0.0347	0.0198	5.0000e-005		1.2900e-003	1.2900e-003		1.1800e-003	1.1800e-003	0.0000	4.2752	4.2752	1.3800e-003	0.0000	4.3098
Total	**2.9000e-003**	**0.0347**	**0.0198**	**5.0000e-005**	**2.6500e-003**	**1.2900e-003**	**3.9400e-003**	**2.9000e-004**	**1.1800e-003**	**1.4700e-003**	**0.0000**	**4.2752**	**4.2752**	**1.3800e-003**	**0.0000**	**4.3098**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.3000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1205	0.1205	1.0000e-005	2.0000e-005	0.1263
Vendor	4.0000e-005	9.8000e-004	3.2000e-004	0.0000	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.3732	0.3732	1.0000e-005	5.0000e-005	0.3897
Worker	1.3000e-004	1.1000e-004	1.4200e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3548	0.3548	1.0000e-005	1.0000e-005	0.3579
Total	**1.8000e-004**	**1.4200e-003**	**1.8200e-003**	**0.0000**	**6.0000e-004**	**1.0000e-005**	**6.2000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.8485**	**0.8485**	**3.0000e-005**	**8.0000e-005**	**0.8740**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1900e-003	0.0000	1.1900e-003	1.3000e-004	0.0000	1.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-003	0.0347	0.0198	5.0000e-005		1.2900e-003	1.2900e-003		1.1800e-003	1.1800e-003	0.0000	4.2752	4.2752	1.3800e-003	0.0000	4.3098
Total	**2.9000e-003**	**0.0347**	**0.0198**	**5.0000e-005**	**1.1900e-003**	**1.2900e-003**	**2.4800e-003**	**1.3000e-004**	**1.1800e-003**	**1.3100e-003**	**0.0000**	**4.2752**	**4.2752**	**1.3800e-003**	**0.0000**	**4.3098**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.3000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1205	0.1205	1.0000e-005	2.0000e-005	0.1263
Vendor	4.0000e-005	9.8000e-004	3.2000e-004	0.0000	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.3732	0.3732	1.0000e-005	5.0000e-005	0.3897
Worker	1.3000e-004	1.1000e-004	1.4200e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3548	0.3548	1.0000e-005	1.0000e-005	0.3579
Total	**1.8000e-004**	**1.4200e-003**	**1.8200e-003**	**0.0000**	**6.0000e-004**	**1.0000e-005**	**6.2000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.8485**	**0.8485**	**3.0000e-005**	**8.0000e-005**	**0.8740**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.5800e-003	0.0000	4.5800e-003	4.9000e-004	0.0000	4.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0139	0.1440	0.1669	2.8000e-004		6.5300e-003	6.5300e-003		6.0100e-003	6.0100e-003	0.0000	24.8788	24.8788	8.0500e-003	0.0000	25.0799
Total	**0.0139**	**0.1440**	**0.1669**	**2.8000e-004**	**4.5800e-003**	**6.5300e-003**	**0.0111**	**4.9000e-004**	**6.0100e-003**	**6.5000e-003**	**0.0000**	**24.8788**	**24.8788**	**8.0500e-003**	**0.0000**	**25.0799**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	1.8100e-003	4.1000e-004	1.0000e-005	1.9000e-004	1.0000e-005	2.0000e-004	5.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.6626	0.6626	4.0000e-005	1.1000e-004	0.6948
Vendor	8.0000e-005	2.2500e-003	7.5000e-004	1.0000e-005	2.9000e-004	2.0000e-005	3.1000e-004	8.0000e-005	2.0000e-005	1.1000e-004	0.0000	0.8585	0.8585	3.0000e-005	1.2000e-004	0.8963
Worker	4.6000e-004	3.7000e-004	4.8900e-003	1.0000e-005	1.5100e-003	1.0000e-005	1.5200e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.2242	1.2242	3.0000e-005	3.0000e-005	1.2349
Total	**5.9000e-004**	**4.4300e-003**	**6.0500e-003**	**3.0000e-005**	**1.9900e-003**	**4.0000e-005**	**2.0300e-003**	**5.3000e-004**	**4.0000e-005**	**5.9000e-004**	**0.0000**	**2.7452**	**2.7452**	**1.0000e-004**	**2.6000e-004**	**2.8260**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0600e-003	0.0000	2.0600e-003	2.2000e-004	0.0000	2.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0139	0.1440	0.1669	2.8000e-004		6.5300e-003	6.5300e-003		6.0100e-003	6.0100e-003	0.0000	24.8787	24.8787	8.0500e-003	0.0000	25.0799
Total	**0.0139**	**0.1440**	**0.1669**	**2.8000e-004**	**2.0600e-003**	**6.5300e-003**	**8.5900e-003**	**2.2000e-004**	**6.0100e-003**	**6.2300e-003**	**0.0000**	**24.8787**	**24.8787**	**8.0500e-003**	**0.0000**	**25.0799**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	1.8100e-003	4.1000e-004	1.0000e-005	1.9000e-004	1.0000e-005	2.0000e-004	5.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.6626	0.6626	4.0000e-005	1.1000e-004	0.6948
Vendor	8.0000e-005	2.2500e-003	7.5000e-004	1.0000e-005	2.9000e-004	2.0000e-005	3.1000e-004	8.0000e-005	2.0000e-005	1.1000e-004	0.0000	0.8585	0.8585	3.0000e-005	1.2000e-004	0.8963
Worker	4.6000e-004	3.7000e-004	4.8900e-003	1.0000e-005	1.5100e-003	1.0000e-005	1.5200e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.2242	1.2242	3.0000e-005	3.0000e-005	1.2349
Total	**5.9000e-004**	**4.4300e-003**	**6.0500e-003**	**3.0000e-005**	**1.9900e-003**	**4.0000e-005**	**2.0300e-003**	**5.3000e-004**	**4.0000e-005**	**5.9000e-004**	**0.0000**	**2.7452**	**2.7452**	**1.0000e-004**	**2.6000e-004**	**2.8260**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.8500e-003	0.0493	0.0632	1.0000e-004		2.5400e-003	2.5400e-003		2.3300e-003	2.3300e-003	0.0000	8.6357	8.6357	2.7900e-003	0.0000	8.7056
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.8500e-003**	**0.0493**	**0.0632**	**1.0000e-004**		**2.5400e-003**	**2.5400e-003**		**2.3300e-003**	**2.3300e-003**	**0.0000**	**8.6357**	**8.6357**	**2.7900e-003**	**0.0000**	**8.7056**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.3000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1205	0.1205	1.0000e-005	2.0000e-005	0.1263
Vendor	4.0000e-005	1.1700e-003	3.9000e-004	0.0000	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4479	0.4479	1.0000e-005	6.0000e-005	0.4676
Worker	2.4000e-004	2.0000e-004	2.5500e-003	1.0000e-005	7.9000e-004	0.0000	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6387	0.6387	2.0000e-005	2.0000e-005	0.6443
Total	**2.9000e-004**	**1.7000e-003**	**3.0200e-003**	**1.0000e-005**	**9.7000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**1.2071**	**1.2071**	**4.0000e-005**	**1.0000e-004**	**1.2382**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.8500e-003	0.0493	0.0632	1.0000e-004		2.5400e-003	2.5400e-003		2.3300e-003	2.3300e-003	0.0000	8.6357	8.6357	2.7900e-003	0.0000	8.7055
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.8500e-003**	**0.0493**	**0.0632**	**1.0000e-004**		**2.5400e-003**	**2.5400e-003**		**2.3300e-003**	**2.3300e-003**	**0.0000**	**8.6357**	**8.6357**	**2.7900e-003**	**0.0000**	**8.7055**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.3000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1205	0.1205	1.0000e-005	2.0000e-005	0.1263
Vendor	4.0000e-005	1.1700e-003	3.9000e-004	0.0000	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4479	0.4479	1.0000e-005	6.0000e-005	0.4676
Worker	2.4000e-004	2.0000e-004	2.5500e-003	1.0000e-005	7.9000e-004	0.0000	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6387	0.6387	2.0000e-005	2.0000e-005	0.6443
Total	**2.9000e-004**	**1.7000e-003**	**3.0200e-003**	**1.0000e-005**	**9.7000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**1.2071**	**1.2071**	**4.0000e-005**	**1.0000e-004**	**1.2382**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0391	0.3249	0.3437	5.6000e-004		0.0164	0.0164		0.0155	0.0155	0.0000	47.1825	47.1825	0.0108	0.0000	47.4522
Total	**0.0391**	**0.3249**	**0.3437**	**5.6000e-004**		**0.0164**	**0.0164**		**0.0155**	**0.0155**	**0.0000**	**47.1825**	**47.1825**	**0.0108**	**0.0000**	**47.4522**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.3000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1205	0.1205	1.0000e-005	2.0000e-005	0.1263
Vendor	6.0000e-005	1.6100e-003	5.3000e-004	1.0000e-005	2.1000e-004	2.0000e-005	2.2000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	0.6158	0.6158	2.0000e-005	9.0000e-005	0.6430
Worker	8.9000e-004	7.2000e-004	9.3500e-003	3.0000e-005	2.9000e-003	2.0000e-005	2.9100e-003	7.7000e-004	2.0000e-005	7.9000e-004	0.0000	2.3419	2.3419	6.0000e-005	6.0000e-005	2.3624
Total	**9.6000e-004**	**2.6600e-003**	**9.9600e-003**	**4.0000e-005**	**3.1400e-003**	**4.0000e-005**	**3.1700e-003**	**8.4000e-004**	**4.0000e-005**	**8.8000e-004**	**0.0000**	**3.0782**	**3.0782**	**9.0000e-005**	**1.7000e-004**	**3.1317**

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3.7 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0391	0.3249	0.3437	5.6000e-004		0.0164	0.0164		0.0155	0.0155	0.0000	47.1824	47.1824	0.0108	0.0000	47.4521
Total	**0.0391**	**0.3249**	**0.3437**	**5.6000e-004**		**0.0164**	**0.0164**		**0.0155**	**0.0155**	**0.0000**	**47.1824**	**47.1824**	**0.0108**	**0.0000**	**47.4521**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.3000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1205	0.1205	1.0000e-005	2.0000e-005	0.1263
Vendor	6.0000e-005	1.6100e-003	5.3000e-004	1.0000e-005	2.1000e-004	2.0000e-005	2.2000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	0.6158	0.6158	2.0000e-005	9.0000e-005	0.6430
Worker	8.9000e-004	7.2000e-004	9.3500e-003	3.0000e-005	2.9000e-003	2.0000e-005	2.9100e-003	7.7000e-004	2.0000e-005	7.9000e-004	0.0000	2.3419	2.3419	6.0000e-005	6.0000e-005	2.3624
Total	**9.6000e-004**	**2.6600e-003**	**9.9600e-003**	**4.0000e-005**	**3.1400e-003**	**4.0000e-005**	**3.1700e-003**	**8.4000e-004**	**4.0000e-005**	**8.8000e-004**	**0.0000**	**3.0782**	**3.0782**	**9.0000e-005**	**1.7000e-004**	**3.1317**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	7.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2300e-003	8.4500e-003	0.0109	2.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	1.5320	1.5320	1.0000e-004	0.0000	1.5345
Total	**1.3000e-003**	**8.4500e-003**	**0.0109**	**2.0000e-005**		**4.9000e-004**	**4.9000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**1.5320**	**1.5320**	**1.0000e-004**	**0.0000**	**1.5345**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	5.9000e-004	1.9000e-004	0.0000	8.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2239	0.2239	1.0000e-005	3.0000e-005	0.2338
Worker	8.0000e-005	7.0000e-005	8.5000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2129	0.2129	1.0000e-005	1.0000e-005	0.2148
Total	**1.0000e-004**	**6.6000e-004**	**1.0400e-003**	**0.0000**	**3.4000e-004**	**1.0000e-005**	**3.4000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**0.4368**	**0.4368**	**2.0000e-005**	**4.0000e-005**	**0.4486**

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3.8 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	7.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2300e-003	8.4500e-003	0.0109	2.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	1.5320	1.5320	1.0000e-004	0.0000	1.5344
Total	**1.3000e-003**	**8.4500e-003**	**0.0109**	**2.0000e-005**		**4.9000e-004**	**4.9000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**1.5320**	**1.5320**	**1.0000e-004**	**0.0000**	**1.5344**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	5.9000e-004	1.9000e-004	0.0000	8.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2239	0.2239	1.0000e-005	3.0000e-005	0.2338
Worker	8.0000e-005	7.0000e-005	8.5000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2129	0.2129	1.0000e-005	1.0000e-005	0.2148
Total	**1.0000e-004**	**6.6000e-004**	**1.0400e-003**	**0.0000**	**3.4000e-004**	**1.0000e-005**	**3.4000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**0.4368**	**0.4368**	**2.0000e-005**	**4.0000e-005**	**0.4486**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.0000e-005	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Unmitigated	4.0000e-005	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**4.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**4.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Joint Transmission Main Pump Station

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.54	1000sqft	0.01	540.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction Start in 2022.

Land Use - 540 square foot development footprint

Construction Phase - Construction Schedule provided by the project applicant.

Off-road Equipment - Construction equipment information provided by the project applicant.

Off-road Equipment - Construction equipment information provided by the project applicant.

Off-road Equipment - Construction equipment information provided by the project applicant.

Off-road Equipment - No Heavy Equipment for Mobilzation Phase.

Off-road Equipment - Construction equipment information provided by the project applicant.

Off-road Equipment - Construction equipment information provided by the project applicant.

Trips and VMT - construction trip information was provided by the project applicant.

Grading - CalEEMod defaults.

Architectural Coating - CalEEMod defaults.

Joint Transmission Main Pump Station - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area Coating - CalEEMod defaults.

Construction Off-road Equipment Mitigation - Complaince with SCAQMD Rule 403

Fleet Mix - CalEEMod defaults.

Off-road Equipment - Construction equipment information provided by the project applicant.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	5.00	12.00
tblConstructionPhase	NumDays	100.00	33.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	23.00
tblConstructionPhase	NumDays	5.00	12.00
tblConstructionPhase	NumDays	1.00	5.00
tblConstructionPhase	NumDays	1.00	10.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Building Construction

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	22.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	13.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	15.00	12.00
tblTripsAndVMT	WorkerTripNumber	13.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	16.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblTripsAndVMT	WorkerTripNumber	0.00	4.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.6617	21.3548	23.4751	0.0398	0.6523	1.0775	1.3288	0.0905	1.0250	1.0922	0.0000	3,728.3762	3,728.3762	0.7806	0.0261	3,752.4588
Maximum	**2.6617**	**21.3548**	**23.4751**	**0.0398**	**0.6523**	**1.0775**	**1.3288**	**0.0905**	**1.0250**	**1.0922**	**0.0000**	**3,728.3762**	**3,728.3762**	**0.7806**	**0.0261**	**3,752.4588**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.6617	21.3548	23.4751	0.0398	0.3606	1.0775	1.3288	0.0673	1.0250	1.0922	0.0000	3,728.3762	3,728.3762	0.7806	0.0261	3,752.4588
Maximum	**2.6617**	**21.3548**	**23.4751**	**0.0398**	**0.3606**	**1.0775**	**1.3288**	**0.0673**	**1.0250**	**1.0922**	**0.0000**	**3,728.3762**	**3,728.3762**	**0.7806**	**0.0261**	**3,752.4588**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	44.71	0.00	0.00	25.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Joint Transmission Main Pump Station - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.4000e-004	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-004	1.2000e-004	0.0000		1.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.4000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**0.0000**	**1.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.4000e-004	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-004	1.2000e-004	0.0000		1.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.4000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**0.0000**	**1.3000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilzation	Site Preparation	6/1/2022	6/7/2022	5	5	
2	Demolition	Demolition	6/8/2022	6/14/2022	5	5	
3	Site Preparation	Site Preparation	6/15/2022	6/28/2022	5	10	
4	Grading	Grading	6/29/2022	7/29/2022	5	23	
5	Paving	Paving	8/1/2022	8/16/2022	5	12	
6	Building Construction	Building Construction	8/17/2022	9/30/2022	5	33	
7	Architectural Coating	Architectural Coating	9/15/2022	9/30/2022	5	12	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 8.63

Acres of Paving: 0.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 32 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Mobilzation	Graders	0	0.00	187	0.41
Mobilzation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	6.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	2	7.00	130	0.42
Paving	Paving Equipment	1	7.00	132	0.36
Paving	Rollers	2	7.00	80	0.38
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Mobilzation	0	6.00	4.00	6.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	8.00	4.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	12.00	4.00	22.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	6.00	4.00	6.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	12.00	4.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	16.00	2.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Joint Transmission Main Pump Station - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Mobilzation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Mobilzation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.0700e-003	0.1872	0.0447	7.3000e-004	0.0210	1.5700e-003	0.0226	5.7500e-003	1.5000e-003	7.2500e-003		79.6609	79.6609	4.2800e-003	0.0127	83.5364
Vendor	7.2900e-003	0.1861	0.0638	7.6000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8600e-003	9.2400e-003		82.2677	82.2677	2.7600e-003	0.0119	85.8909
Worker	0.0207	0.0145	0.2287	6.1000e-004	0.0671	4.0000e-004	0.0675	0.0178	3.7000e-004	0.0182		61.3519	61.3519	1.6000e-003	1.4700e-003	61.8295
Total	**0.0330**	**0.3879**	**0.3373**	**2.1000e-003**	**0.1137**	**3.9200e-003**	**0.1176**	**0.0309**	**3.7300e-003**	**0.0346**		**223.2806**	**223.2806**	**8.6400e-003**	**0.0261**	**231.2567**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Mobilzation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.0700e-003	0.1872	0.0447	7.3000e-004	0.0210	1.5700e-003	0.0226	5.7500e-003	1.5000e-003	7.2500e-003		79.6609	79.6609	4.2800e-003	0.0127	83.5364
Vendor	7.2900e-003	0.1861	0.0638	7.6000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8600e-003	9.2400e-003		82.2677	82.2677	2.7600e-003	0.0119	85.8909
Worker	0.0207	0.0145	0.2287	6.1000e-004	0.0671	4.0000e-004	0.0675	0.0178	3.7000e-004	0.0182		61.3519	61.3519	1.6000e-003	1.4700e-003	61.8295
Total	**0.0330**	**0.3879**	**0.3373**	**2.1000e-003**	**0.1137**	**3.9200e-003**	**0.1176**	**0.0309**	**3.7300e-003**	**0.0346**		**223.2806**	**223.2806**	**8.6400e-003**	**0.0261**	**231.2567**

3.3 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8819	17.7473	15.3872	0.0273		0.8980	0.8980		0.8501	0.8501		2,614.8425	2,614.8425	0.5270		2,628.0173
Total	**1.8819**	**17.7473**	**15.3872**	**0.0273**		**0.8980**	**0.8980**		**0.8501**	**0.8501**		**2,614.8425**	**2,614.8425**	**0.5270**		**2,628.0173**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.0700e-003	0.1872	0.0447	7.3000e-004	0.0210	1.5700e-003	0.0226	5.7500e-003	1.5000e-003	7.2500e-003		79.6609	79.6609	4.2800e-003	0.0127	83.5364
Vendor	7.2900e-003	0.1861	0.0638	7.6000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8600e-003	9.2400e-003		82.2677	82.2677	2.7600e-003	0.0119	85.8909
Worker	0.0207	0.0145	0.2287	6.1000e-004	0.0671	4.0000e-004	0.0675	0.0178	3.7000e-004	0.0182		61.3519	61.3519	1.6000e-003	1.4700e-003	61.8295
Total	**0.0330**	**0.3879**	**0.3373**	**2.1000e-003**	**0.1137**	**3.9200e-003**	**0.1176**	**0.0309**	**3.7300e-003**	**0.0346**		**223.2806**	**223.2806**	**8.6400e-003**	**0.0261**	**231.2567**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8819	17.7473	15.3872	0.0273		0.8980	0.8980		0.8501	0.8501	0.0000	2,614.8425	2,614.8425	0.5270		2,628.0173
Total	**1.8819**	**17.7473**	**15.3872**	**0.0273**		**0.8980**	**0.8980**		**0.8501**	**0.8501**	**0.0000**	**2,614.8425**	**2,614.8425**	**0.5270**		**2,628.0173**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.0700e-003	0.1872	0.0447	7.3000e-004	0.0210	1.5700e-003	0.0226	5.7500e-003	1.5000e-003	7.2500e-003		79.6609	79.6609	4.2800e-003	0.0127	83.5364
Vendor	7.2900e-003	0.1861	0.0638	7.6000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8600e-003	9.2400e-003		82.2677	82.2677	2.7600e-003	0.0119	85.8909
Worker	0.0207	0.0145	0.2287	6.1000e-004	0.0671	4.0000e-004	0.0675	0.0178	3.7000e-004	0.0182		61.3519	61.3519	1.6000e-003	1.4700e-003	61.8295
Total	**0.0330**	**0.3879**	**0.3373**	**2.1000e-003**	**0.1137**	**3.9200e-003**	**0.1176**	**0.0309**	**3.7300e-003**	**0.0346**		**223.2806**	**223.2806**	**8.6400e-003**	**0.0261**	**231.2567**

3.4 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.5797	6.9332	3.9597	9.7300e-003		0.2573	0.2573		0.2367	0.2367		942.5179	942.5179	0.3048		950.1386
Total	**0.5797**	**6.9332**	**3.9597**	**9.7300e-003**	**0.5303**	**0.2573**	**0.7876**	**0.0573**	**0.2367**	**0.2940**		**942.5179**	**942.5179**	**0.3048**		**950.1386**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.6900e-003	0.0624	0.0149	2.4000e-004	7.0000e-003	5.2000e-004	7.5200e-003	1.9200e-003	5.0000e-004	2.4200e-003		26.5536	26.5536	1.4300e-003	4.2200e-003	27.8455
Vendor	7.2900e-003	0.1861	0.0638	7.6000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8600e-003	9.2400e-003		82.2677	82.2677	2.7600e-003	0.0119	85.8909
Worker	0.0275	0.0194	0.3049	8.1000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242		81.8026	81.8026	2.1400e-003	1.9600e-003	82.4393
Total	**0.0365**	**0.2679**	**0.3837**	**1.8100e-003**	**0.1220**	**3.0000e-003**	**0.1250**	**0.0330**	**2.8500e-003**	**0.0359**		**190.6240**	**190.6240**	**6.3300e-003**	**0.0181**	**196.1756**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.5797	6.9332	3.9597	9.7300e-003		0.2573	0.2573		0.2367	0.2367	0.0000	942.5179	942.5179	0.3048		950.1386
Total	**0.5797**	**6.9332**	**3.9597**	**9.7300e-003**	**0.2386**	**0.2573**	**0.4959**	**0.0258**	**0.2367**	**0.2625**	**0.0000**	**942.5179**	**942.5179**	**0.3048**		**950.1386**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.6900e-003	0.0624	0.0149	2.4000e-004	7.0000e-003	5.2000e-004	7.5200e-003	1.9200e-003	5.0000e-004	2.4200e-003		26.5536	26.5536	1.4300e-003	4.2200e-003	27.8455
Vendor	7.2900e-003	0.1861	0.0638	7.6000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8600e-003	9.2400e-003		82.2677	82.2677	2.7600e-003	0.0119	85.8909
Worker	0.0275	0.0194	0.3049	8.1000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242		81.8026	81.8026	2.1400e-003	1.9600e-003	82.4393
Total	**0.0365**	**0.2679**	**0.3837**	**1.8100e-003**	**0.1220**	**3.0000e-003**	**0.1250**	**0.0330**	**2.8500e-003**	**0.0359**		**190.6240**	**190.6240**	**6.3300e-003**	**0.0181**	**196.1756**

3.5 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3979	0.0000	0.3979	0.0430	0.0000	0.0430			0.0000			0.0000
Off-Road	1.2102	12.5241	14.5154	0.0246		0.5676	0.5676		0.5222	0.5222		2,384.7066	2,384.7066	0.7713		2,403.9882
Total	**1.2102**	**12.5241**	**14.5154**	**0.0246**	**0.3979**	**0.5676**	**0.9655**	**0.0430**	**0.5222**	**0.5652**		**2,384.7066**	**2,384.7066**	**0.7713**		**2,403.9882**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.0400e-003	0.1492	0.0357	5.8000e-004	0.0167	1.2500e-003	0.0180	4.5900e-003	1.1900e-003	5.7800e-003		63.4978	63.4978	3.4100e-003	0.0101	66.5870
Vendor	7.2900e-003	0.1861	0.0638	7.6000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8600e-003	9.2400e-003		82.2677	82.2677	2.7600e-003	0.0119	85.8909
Worker	0.0413	0.0291	0.4574	1.2100e-003	0.1341	8.0000e-004	0.1349	0.0356	7.4000e-004	0.0363		122.7039	122.7039	3.2100e-003	2.9400e-003	123.6589
Total	**0.0527**	**0.3644**	**0.5569**	**2.5500e-003**	**0.1765**	**4.0000e-003**	**0.1805**	**0.0475**	**3.7900e-003**	**0.0513**		**268.4694**	**268.4694**	**9.3800e-003**	**0.0250**	**276.1368**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1791	0.0000	0.1791	0.0193	0.0000	0.0193			0.0000			0.0000
Off-Road	1.2102	12.5241	14.5154	0.0246		0.5676	0.5676		0.5222	0.5222	0.0000	2,384.7066	2,384.7066	0.7713		2,403.9882
Total	**1.2102**	**12.5241**	**14.5154**	**0.0246**	**0.1791**	**0.5676**	**0.7467**	**0.0193**	**0.5222**	**0.5415**	**0.0000**	**2,384.7066**	**2,384.7066**	**0.7713**		**2,403.9882**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.0400e-003	0.1492	0.0357	5.8000e-004	0.0167	1.2500e-003	0.0180	4.5900e-003	1.1900e-003	5.7800e-003		63.4978	63.4978	3.4100e-003	0.0101	66.5870
Vendor	7.2900e-003	0.1861	0.0638	7.6000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8600e-003	9.2400e-003		82.2677	82.2677	2.7600e-003	0.0119	85.8909
Worker	0.0413	0.0291	0.4574	1.2100e-003	0.1341	8.0000e-004	0.1349	0.0356	7.4000e-004	0.0363		122.7039	122.7039	3.2100e-003	2.9400e-003	123.6589
Total	**0.0527**	**0.3644**	**0.5569**	**2.5500e-003**	**0.1765**	**4.0000e-003**	**0.1805**	**0.0475**	**3.7900e-003**	**0.0513**		**268.4694**	**268.4694**	**9.3800e-003**	**0.0250**	**276.1368**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8090	8.2138	10.5302	0.0164		0.4227	0.4227		0.3889	0.3889		1,586.5429	1,586.5429	0.5131		1,599.3709
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8090**	**8.2138**	**10.5302**	**0.0164**		**0.4227**	**0.4227**		**0.3889**	**0.3889**		**1,586.5429**	**1,586.5429**	**0.5131**		**1,599.3709**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4100e-003	0.0520	0.0124	2.0000e-004	5.8300e-003	4.3000e-004	6.2700e-003	1.6000e-003	4.2000e-004	2.0100e-003		22.1280	22.1280	1.1900e-003	3.5100e-003	23.2045
Vendor	7.2900e-003	0.1861	0.0638	7.6000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8600e-003	9.2400e-003		82.2677	82.2677	2.7600e-003	0.0119	85.8909
Worker	0.0413	0.0291	0.4574	1.2100e-003	0.1341	8.0000e-004	0.1349	0.0356	7.4000e-004	0.0363		122.7039	122.7039	3.2100e-003	2.9400e-003	123.6589
Total	**0.0500**	**0.2672**	**0.5336**	**2.1700e-003**	**0.1656**	**3.1800e-003**	**0.1688**	**0.0445**	**3.0200e-003**	**0.0476**		**227.0996**	**227.0996**	**7.1600e-003**	**0.0184**	**232.7544**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8090	8.2138	10.5302	0.0164		0.4227	0.4227		0.3889	0.3889	0.0000	1,586.5429	1,586.5429	0.5131		1,599.3709
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8090**	**8.2138**	**10.5302**	**0.0164**		**0.4227**	**0.4227**		**0.3889**	**0.3889**	**0.0000**	**1,586.5429**	**1,586.5429**	**0.5131**		**1,599.3709**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4100e-003	0.0520	0.0124	2.0000e-004	5.8300e-003	4.3000e-004	6.2700e-003	1.6000e-003	4.2000e-004	2.0100e-003		22.1280	22.1280	1.1900e-003	3.5100e-003	23.2045
Vendor	7.2900e-003	0.1861	0.0638	7.6000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8600e-003	9.2400e-003		82.2677	82.2677	2.7600e-003	0.0119	85.8909
Worker	0.0413	0.0291	0.4574	1.2100e-003	0.1341	8.0000e-004	0.1349	0.0356	7.4000e-004	0.0363		122.7039	122.7039	3.2100e-003	2.9400e-003	123.6589
Total	**0.0500**	**0.2672**	**0.5336**	**2.1700e-003**	**0.1656**	**3.1800e-003**	**0.1688**	**0.0445**	**3.0200e-003**	**0.0476**		**227.0996**	**227.0996**	**7.1600e-003**	**0.0184**	**232.7544**

3.7 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3681	19.6928	20.8308	0.0339		0.9923	0.9923		0.9400	0.9400		3,152.1074	3,152.1074	0.7207		3,170.1255
Total	**2.3681**	**19.6928**	**20.8308**	**0.0339**		**0.9923**	**0.9923**		**0.9400**	**0.9400**		**3,152.1074**	**3,152.1074**	**0.7207**		**3,170.1255**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.1000e-004	0.0189	4.5200e-003	7.0000e-005	2.1200e-003	1.6000e-004	2.2800e-003	5.8000e-004	1.5000e-004	7.3000e-004		8.0466	8.0466	4.3000e-004	1.2800e-003	8.4380
Vendor	3.6500e-003	0.0931	0.0319	3.8000e-004	0.0128	9.7000e-004	0.0138	3.6900e-003	9.3000e-004	4.6200e-003		41.1339	41.1339	1.3800e-003	5.9600e-003	42.9455
Worker	0.0551	0.0388	0.6099	1.6200e-003	0.1788	1.0700e-003	0.1799	0.0474	9.8000e-004	0.0484		163.6052	163.6052	4.2800e-003	3.9100e-003	164.8785
Total	**0.0593**	**0.1507**	**0.6463**	**2.0700e-003**	**0.1938**	**2.2000e-003**	**0.1960**	**0.0517**	**2.0600e-003**	**0.0538**		**212.7856**	**212.7856**	**6.0900e-003**	**0.0112**	**216.2620**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3681	19.6928	20.8308	0.0339		0.9923	0.9923		0.9400	0.9400	0.0000	3,152.1074	3,152.1074	0.7207		3,170.1255
Total	**2.3681**	**19.6928**	**20.8308**	**0.0339**		**0.9923**	**0.9923**		**0.9400**	**0.9400**	**0.0000**	**3,152.1074**	**3,152.1074**	**0.7207**		**3,170.1255**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.1000e-004	0.0189	4.5200e-003	7.0000e-005	2.1200e-003	1.6000e-004	2.2800e-003	5.8000e-004	1.5000e-004	7.3000e-004		8.0466	8.0466	4.3000e-004	1.2800e-003	8.4380
Vendor	3.6500e-003	0.0931	0.0319	3.8000e-004	0.0128	9.7000e-004	0.0138	3.6900e-003	9.3000e-004	4.6200e-003		41.1339	41.1339	1.3800e-003	5.9600e-003	42.9455
Worker	0.0551	0.0388	0.6099	1.6200e-003	0.1788	1.0700e-003	0.1799	0.0474	9.8000e-004	0.0484		163.6052	163.6052	4.2800e-003	3.9100e-003	164.8785
Total	**0.0593**	**0.1507**	**0.6463**	**2.0700e-003**	**0.1938**	**2.2000e-003**	**0.1960**	**0.0517**	**2.0600e-003**	**0.0538**		**212.7856**	**212.7856**	**6.0900e-003**	**0.0112**	**216.2620**

3.8 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0124					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**0.2169**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6500e-003	0.0931	0.0319	3.8000e-004	0.0128	9.7000e-004	0.0138	3.6900e-003	9.3000e-004	4.6200e-003		41.1339	41.1339	1.3800e-003	5.9600e-003	42.9455
Worker	0.0138	9.6900e-003	0.1525	4.0000e-004	0.0447	2.7000e-004	0.0450	0.0119	2.5000e-004	0.0121		40.9013	40.9013	1.0700e-003	9.8000e-004	41.2196
Total	**0.0174**	**0.1028**	**0.1844**	**7.8000e-004**	**0.0575**	**1.2400e-003**	**0.0588**	**0.0156**	**1.1800e-003**	**0.0167**		**82.0352**	**82.0352**	**2.4500e-003**	**6.9400e-003**	**84.1651**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0124					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**0.2169**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6500e-003	0.0931	0.0319	3.8000e-004	0.0128	9.7000e-004	0.0138	3.6900e-003	9.3000e-004	4.6200e-003		41.1339	41.1339	1.3800e-003	5.9600e-003	42.9455
Worker	0.0138	9.6900e-003	0.1525	4.0000e-004	0.0447	2.7000e-004	0.0450	0.0119	2.5000e-004	0.0121		40.9013	40.9013	1.0700e-003	9.8000e-004	41.2196
Total	**0.0174**	**0.1028**	**0.1844**	**7.8000e-004**	**0.0575**	**1.2400e-003**	**0.0588**	**0.0156**	**1.1800e-003**	**0.0167**		**82.0352**	**82.0352**	**2.4500e-003**	**6.9400e-003**	**84.1651**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4000e-004	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-004	1.2000e-004	0.0000		1.3000e-004
Unmitigated	2.4000e-004	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-004	1.2000e-004	0.0000		1.3000e-004

Joint Transmission Main Pump Station - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.0000e-005					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-004	1.2000e-004	0.0000		1.3000e-004
Total	**2.4000e-004**	**0.0000**	**6.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2000e-004**	**1.2000e-004**	**0.0000**		**1.3000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.0000e-005					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-004	1.2000e-004	0.0000		1.3000e-004
Total	**2.4000e-004**	**0.0000**	**6.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2000e-004**	**1.2000e-004**	**0.0000**		**1.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Joint Transmission Main Pump Station

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.54	1000sqft	0.01	540.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction Start in 2022.

Land Use - 540 square foot development footprint

Construction Phase - Construction Schedule provided by the project applicant.

Off-road Equipment - Construction equipment information provided by the project applicant.

Off-road Equipment - Construction equipment information provided by the project applicant.

Off-road Equipment - Construction equipment information provided by the project applicant.

Off-road Equipment - No Heavy Equipment for Mobilzation Phase.

Off-road Equipment - Construction equipment information provided by the project applicant.

Off-road Equipment - Construction equipment information provided by the project applicant.

Trips and VMT - construction trip information was provided by the project applicant.

Grading - CalEEMod defaults.

Architectural Coating - CalEEMod defaults.

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area Coating - CalEEMod defaults.

Construction Off-road Equipment Mitigation - Complaince with SCAQMD Rule 403

Fleet Mix - CalEEMod defaults.

Off-road Equipment - Construction equipment information provided by the project applicant.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	5.00	12.00
tblConstructionPhase	NumDays	100.00	33.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	23.00
tblConstructionPhase	NumDays	5.00	12.00
tblConstructionPhase	NumDays	1.00	5.00
tblConstructionPhase	NumDays	1.00	10.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Building Construction

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	22.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	13.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	15.00	12.00
tblTripsAndVMT	WorkerTripNumber	13.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	16.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblTripsAndVMT	WorkerTripNumber	0.00	4.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.6651	21.3683	23.4043	0.0396	0.6523	1.0775	1.3288	0.0905	1.0250	1.0922	0.0000	3,716.5293	3,716.5293	0.7807	0.0262	3,740.7071
Maximum	**2.6651**	**21.3683**	**23.4043**	**0.0396**	**0.6523**	**1.0775**	**1.3288**	**0.0905**	**1.0250**	**1.0922**	**0.0000**	**3,716.5293**	**3,716.5293**	**0.7807**	**0.0262**	**3,740.7071**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.6651	21.3683	23.4043	0.0396	0.3606	1.0775	1.3288	0.0673	1.0250	1.0922	0.0000	3,716.5293	3,716.5293	0.7807	0.0262	3,740.7071
Maximum	**2.6651**	**21.3683**	**23.4043**	**0.0396**	**0.3606**	**1.0775**	**1.3288**	**0.0673**	**1.0250**	**1.0922**	**0.0000**	**3,716.5293**	**3,716.5293**	**0.7807**	**0.0262**	**3,740.7071**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	44.71	0.00	0.00	25.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.4000e-004	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-004	1.2000e-004	0.0000		1.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.4000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**0.0000**	**1.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.4000e-004	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-004	1.2000e-004	0.0000		1.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.4000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**0.0000**	**1.3000e-004**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilzation	Site Preparation	6/1/2022	6/7/2022	5	5	
2	Demolition	Demolition	6/8/2022	6/14/2022	5	5	
3	Site Preparation	Site Preparation	6/15/2022	6/28/2022	5	10	
4	Grading	Grading	6/29/2022	7/29/2022	5	23	
5	Paving	Paving	8/1/2022	8/16/2022	5	12	
6	Building Construction	Building Construction	8/17/2022	9/30/2022	5	33	
7	Architectural Coating	Architectural Coating	9/15/2022	9/30/2022	5	12	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 8.63

Acres of Paving: 0.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 32 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Mobilzation	Graders	0	0.00	187	0.41
Mobilzation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	6.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	2	7.00	130	0.42
Paving	Paving Equipment	1	7.00	132	0.36
Paving	Rollers	2	7.00	80	0.38
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Mobilzation	0	6.00	4.00	6.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	8.00	4.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	12.00	4.00	22.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	6.00	4.00	6.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	12.00	4.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	16.00	2.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Mobilzation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Mobilzation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9300e-003	0.1955	0.0456	7.3000e-004	0.0210	1.5700e-003	0.0226	5.7500e-003	1.5000e-003	7.2500e-003		79.6902	79.6902	4.2700e-003	0.0127	83.5670
Vendor	7.1600e-003	0.1943	0.0661	7.7000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8700e-003	9.2400e-003		82.3089	82.3089	2.7500e-003	0.0119	85.9365
Worker	0.0217	0.0159	0.2068	5.7000e-004	0.0671	4.0000e-004	0.0675	0.0178	3.7000e-004	0.0182		57.7846	57.7846	1.6200e-003	1.5600e-003	58.2893
Total	**0.0338**	**0.4056**	**0.3185**	**2.0700e-003**	**0.1137**	**3.9200e-003**	**0.1176**	**0.0309**	**3.7400e-003**	**0.0346**		**219.7838**	**219.7838**	**8.6400e-003**	**0.0262**	**227.7928**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Mobilzation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9300e-003	0.1955	0.0456	7.3000e-004	0.0210	1.5700e-003	0.0226	5.7500e-003	1.5000e-003	7.2500e-003		79.6902	79.6902	4.2700e-003	0.0127	83.5670
Vendor	7.1600e-003	0.1943	0.0661	7.7000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8700e-003	9.2400e-003		82.3089	82.3089	2.7500e-003	0.0119	85.9365
Worker	0.0217	0.0159	0.2068	5.7000e-004	0.0671	4.0000e-004	0.0675	0.0178	3.7000e-004	0.0182		57.7846	57.7846	1.6200e-003	1.5600e-003	58.2893
Total	**0.0338**	**0.4056**	**0.3185**	**2.0700e-003**	**0.1137**	**3.9200e-003**	**0.1176**	**0.0309**	**3.7400e-003**	**0.0346**		**219.7838**	**219.7838**	**8.6400e-003**	**0.0262**	**227.7928**

3.3 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8819	17.7473	15.3872	0.0273		0.8980	0.8980		0.8501	0.8501		2,614.8425	2,614.8425	0.5270		2,628.0173
Total	**1.8819**	**17.7473**	**15.3872**	**0.0273**		**0.8980**	**0.8980**		**0.8501**	**0.8501**		**2,614.8425**	**2,614.8425**	**0.5270**		**2,628.0173**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9300e-003	0.1955	0.0456	7.3000e-004	0.0210	1.5700e-003	0.0226	5.7500e-003	1.5000e-003	7.2500e-003		79.6902	79.6902	4.2700e-003	0.0127	83.5670
Vendor	7.1600e-003	0.1943	0.0661	7.7000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8700e-003	9.2400e-003		82.3089	82.3089	2.7500e-003	0.0119	85.9365
Worker	0.0217	0.0159	0.2068	5.7000e-004	0.0671	4.0000e-004	0.0675	0.0178	3.7000e-004	0.0182		57.7846	57.7846	1.6200e-003	1.5600e-003	58.2893
Total	**0.0338**	**0.4056**	**0.3185**	**2.0700e-003**	**0.1137**	**3.9200e-003**	**0.1176**	**0.0309**	**3.7400e-003**	**0.0346**		**219.7838**	**219.7838**	**8.6400e-003**	**0.0262**	**227.7928**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8819	17.7473	15.3872	0.0273		0.8980	0.8980		0.8501	0.8501	0.0000	2,614.8425	2,614.8425	0.5270		2,628.0173
Total	**1.8819**	**17.7473**	**15.3872**	**0.0273**		**0.8980**	**0.8980**		**0.8501**	**0.8501**	**0.0000**	**2,614.8425**	**2,614.8425**	**0.5270**		**2,628.0173**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9300e-003	0.1955	0.0456	7.3000e-004	0.0210	1.5700e-003	0.0226	5.7500e-003	1.5000e-003	7.2500e-003		79.6902	79.6902	4.2700e-003	0.0127	83.5670
Vendor	7.1600e-003	0.1943	0.0661	7.7000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8700e-003	9.2400e-003		82.3089	82.3089	2.7500e-003	0.0119	85.9365
Worker	0.0217	0.0159	0.2068	5.7000e-004	0.0671	4.0000e-004	0.0675	0.0178	3.7000e-004	0.0182		57.7846	57.7846	1.6200e-003	1.5600e-003	58.2893
Total	**0.0338**	**0.4056**	**0.3185**	**2.0700e-003**	**0.1137**	**3.9200e-003**	**0.1176**	**0.0309**	**3.7400e-003**	**0.0346**		**219.7838**	**219.7838**	**8.6400e-003**	**0.0262**	**227.7928**

3.4 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.5797	6.9332	3.9597	9.7300e-003		0.2573	0.2573		0.2367	0.2367		942.5179	942.5179	0.3048		950.1386
Total	**0.5797**	**6.9332**	**3.9597**	**9.7300e-003**	**0.5303**	**0.2573**	**0.7876**	**0.0573**	**0.2367**	**0.2940**		**942.5179**	**942.5179**	**0.3048**		**950.1386**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.6400e-003	0.0652	0.0152	2.4000e-004	7.0000e-003	5.2000e-004	7.5200e-003	1.9200e-003	5.0000e-004	2.4200e-003		26.5634	26.5634	1.4200e-003	4.2200e-003	27.8557
Vendor	7.1600e-003	0.1943	0.0661	7.7000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8700e-003	9.2400e-003		82.3089	82.3089	2.7500e-003	0.0119	85.9365
Worker	0.0290	0.0212	0.2757	7.6000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242		77.0462	77.0462	2.1600e-003	2.0800e-003	77.7191
Total	**0.0378**	**0.2806**	**0.3570**	**1.7700e-003**	**0.1220**	**3.0000e-003**	**0.1250**	**0.0330**	**2.8600e-003**	**0.0359**		**185.9185**	**185.9185**	**6.3300e-003**	**0.0182**	**191.5113**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.5797	6.9332	3.9597	9.7300e-003		0.2573	0.2573		0.2367	0.2367	0.0000	942.5179	942.5179	0.3048		950.1386
Total	**0.5797**	**6.9332**	**3.9597**	**9.7300e-003**	**0.2386**	**0.2573**	**0.4959**	**0.0258**	**0.2367**	**0.2625**	**0.0000**	**942.5179**	**942.5179**	**0.3048**		**950.1386**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.6400e-003	0.0652	0.0152	2.4000e-004	7.0000e-003	5.2000e-004	7.5200e-003	1.9200e-003	5.0000e-004	2.4200e-003		26.5634	26.5634	1.4200e-003	4.2200e-003	27.8557
Vendor	7.1600e-003	0.1943	0.0661	7.7000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8700e-003	9.2400e-003		82.3089	82.3089	2.7500e-003	0.0119	85.9365
Worker	0.0290	0.0212	0.2757	7.6000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242		77.0462	77.0462	2.1600e-003	2.0800e-003	77.7191
Total	**0.0378**	**0.2806**	**0.3570**	**1.7700e-003**	**0.1220**	**3.0000e-003**	**0.1250**	**0.0330**	**2.8600e-003**	**0.0359**		**185.9185**	**185.9185**	**6.3300e-003**	**0.0182**	**191.5113**

3.5 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3979	0.0000	0.3979	0.0430	0.0000	0.0430			0.0000			0.0000
Off-Road	1.2102	12.5241	14.5154	0.0246		0.5676	0.5676		0.5222	0.5222		2,384.7066	2,384.7066	0.7713		2,403.9882
Total	**1.2102**	**12.5241**	**14.5154**	**0.0246**	**0.3979**	**0.5676**	**0.9655**	**0.0430**	**0.5222**	**0.5652**		**2,384.7066**	**2,384.7066**	**0.7713**		**2,403.9882**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.9300e-003	0.1558	0.0363	5.8000e-004	0.0167	1.2500e-003	0.0180	4.5900e-003	1.2000e-003	5.7800e-003		63.5212	63.5212	3.4000e-003	0.0101	66.6114
Vendor	7.1600e-003	0.1943	0.0661	7.7000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8700e-003	9.2400e-003		82.3089	82.3089	2.7500e-003	0.0119	85.9365
Worker	0.0435	0.0318	0.4135	1.1400e-003	0.1341	8.0000e-004	0.1349	0.0356	7.4000e-004	0.0363		115.5692	115.5692	3.2500e-003	3.1200e-003	116.5787
Total	**0.0546**	**0.3818**	**0.5159**	**2.4900e-003**	**0.1765**	**4.0000e-003**	**0.1805**	**0.0475**	**3.8100e-003**	**0.0513**		**261.3994**	**261.3994**	**9.4000e-003**	**0.0251**	**269.1265**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1791	0.0000	0.1791	0.0193	0.0000	0.0193			0.0000			0.0000
Off-Road	1.2102	12.5241	14.5154	0.0246		0.5676	0.5676		0.5222	0.5222	0.0000	2,384.7066	2,384.7066	0.7713		2,403.9882
Total	**1.2102**	**12.5241**	**14.5154**	**0.0246**	**0.1791**	**0.5676**	**0.7467**	**0.0193**	**0.5222**	**0.5415**	**0.0000**	**2,384.7066**	**2,384.7066**	**0.7713**		**2,403.9882**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.9300e-003	0.1558	0.0363	5.8000e-004	0.0167	1.2500e-003	0.0180	4.5900e-003	1.2000e-003	5.7800e-003		63.5212	63.5212	3.4000e-003	0.0101	66.6114
Vendor	7.1600e-003	0.1943	0.0661	7.7000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8700e-003	9.2400e-003		82.3089	82.3089	2.7500e-003	0.0119	85.9365
Worker	0.0435	0.0318	0.4135	1.1400e-003	0.1341	8.0000e-004	0.1349	0.0356	7.4000e-004	0.0363		115.5692	115.5692	3.2500e-003	3.1200e-003	116.5787
Total	**0.0546**	**0.3818**	**0.5159**	**2.4900e-003**	**0.1765**	**4.0000e-003**	**0.1805**	**0.0475**	**3.8100e-003**	**0.0513**		**261.3994**	**261.3994**	**9.4000e-003**	**0.0251**	**269.1265**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8090	8.2138	10.5302	0.0164		0.4227	0.4227		0.3889	0.3889		1,586.5429	1,586.5429	0.5131		1,599.3709
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8090**	**8.2138**	**10.5302**	**0.0164**		**0.4227**	**0.4227**		**0.3889**	**0.3889**		**1,586.5429**	**1,586.5429**	**0.5131**		**1,599.3709**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3700e-003	0.0543	0.0127	2.0000e-004	5.8300e-003	4.4000e-004	6.2700e-003	1.6000e-003	4.2000e-004	2.0200e-003		22.1362	22.1362	1.1900e-003	3.5100e-003	23.2131
Vendor	7.1600e-003	0.1943	0.0661	7.7000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8700e-003	9.2400e-003		82.3089	82.3089	2.7500e-003	0.0119	85.9365
Worker	0.0435	0.0318	0.4135	1.1400e-003	0.1341	8.0000e-004	0.1349	0.0356	7.4000e-004	0.0363		115.5692	115.5692	3.2500e-003	3.1200e-003	116.5787
Total	**0.0520**	**0.2803**	**0.4923**	**2.1100e-003**	**0.1656**	**3.1900e-003**	**0.1688**	**0.0445**	**3.0300e-003**	**0.0476**		**220.0143**	**220.0143**	**7.1900e-003**	**0.0186**	**225.7282**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8090	8.2138	10.5302	0.0164		0.4227	0.4227		0.3889	0.3889	0.0000	1,586.5429	1,586.5429	0.5131		1,599.3709
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8090**	**8.2138**	**10.5302**	**0.0164**		**0.4227**	**0.4227**		**0.3889**	**0.3889**	**0.0000**	**1,586.5429**	**1,586.5429**	**0.5131**		**1,599.3709**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3700e-003	0.0543	0.0127	2.0000e-004	5.8300e-003	4.4000e-004	6.2700e-003	1.6000e-003	4.2000e-004	2.0200e-003		22.1362	22.1362	1.1900e-003	3.5100e-003	23.2131
Vendor	7.1600e-003	0.1943	0.0661	7.7000e-004	0.0256	1.9500e-003	0.0276	7.3700e-003	1.8700e-003	9.2400e-003		82.3089	82.3089	2.7500e-003	0.0119	85.9365
Worker	0.0435	0.0318	0.4135	1.1400e-003	0.1341	8.0000e-004	0.1349	0.0356	7.4000e-004	0.0363		115.5692	115.5692	3.2500e-003	3.1200e-003	116.5787
Total	**0.0520**	**0.2803**	**0.4923**	**2.1100e-003**	**0.1656**	**3.1900e-003**	**0.1688**	**0.0445**	**3.0300e-003**	**0.0476**		**220.0143**	**220.0143**	**7.1900e-003**	**0.0186**	**225.7282**

3.7 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3681	19.6928	20.8308	0.0339		0.9923	0.9923		0.9400	0.9400		3,152.1074	3,152.1074	0.7207		3,170.1255
Total	**2.3681**	**19.6928**	**20.8308**	**0.0339**		**0.9923**	**0.9923**		**0.9400**	**0.9400**		**3,152.1074**	**3,152.1074**	**0.7207**		**3,170.1255**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.0000e-004	0.0197	4.6000e-003	7.0000e-005	2.1200e-003	1.6000e-004	2.2800e-003	5.8000e-004	1.5000e-004	7.3000e-004		8.0495	8.0495	4.3000e-004	1.2800e-003	8.4411
Vendor	3.5800e-003	0.0971	0.0331	3.8000e-004	0.0128	9.8000e-004	0.0138	3.6900e-003	9.3000e-004	4.6200e-003		41.1545	41.1545	1.3700e-003	5.9700e-003	42.9683
Worker	0.0580	0.0424	0.5513	1.5200e-003	0.1788	1.0700e-003	0.1799	0.0474	9.8000e-004	0.0484		154.0923	154.0923	4.3300e-003	4.1500e-003	155.4382
Total	**0.0620**	**0.1593**	**0.5890**	**1.9700e-003**	**0.1938**	**2.2100e-003**	**0.1960**	**0.0517**	**2.0600e-003**	**0.0538**		**203.2963**	**203.2963**	**6.1300e-003**	**0.0114**	**206.8476**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3681	19.6928	20.8308	0.0339		0.9923	0.9923		0.9400	0.9400	0.0000	3,152.1074	3,152.1074	0.7207		3,170.1255
Total	**2.3681**	**19.6928**	**20.8308**	**0.0339**		**0.9923**	**0.9923**		**0.9400**	**0.9400**	**0.0000**	**3,152.1074**	**3,152.1074**	**0.7207**		**3,170.1255**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.0000e-004	0.0197	4.6000e-003	7.0000e-005	2.1200e-003	1.6000e-004	2.2800e-003	5.8000e-004	1.5000e-004	7.3000e-004		8.0495	8.0495	4.3000e-004	1.2800e-003	8.4411
Vendor	3.5800e-003	0.0971	0.0331	3.8000e-004	0.0128	9.8000e-004	0.0138	3.6900e-003	9.3000e-004	4.6200e-003		41.1545	41.1545	1.3700e-003	5.9700e-003	42.9683
Worker	0.0580	0.0424	0.5513	1.5200e-003	0.1788	1.0700e-003	0.1799	0.0474	9.8000e-004	0.0484		154.0923	154.0923	4.3300e-003	4.1500e-003	155.4382
Total	**0.0620**	**0.1593**	**0.5890**	**1.9700e-003**	**0.1938**	**2.2100e-003**	**0.1960**	**0.0517**	**2.0600e-003**	**0.0538**		**203.2963**	**203.2963**	**6.1300e-003**	**0.0114**	**206.8476**

3.8 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0124					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**0.2169**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5800e-003	0.0971	0.0331	3.8000e-004	0.0128	9.8000e-004	0.0138	3.6900e-003	9.3000e-004	4.6200e-003		41.1545	41.1545	1.3700e-003	5.9700e-003	42.9683
Worker	0.0145	0.0106	0.1378	3.8000e-004	0.0447	2.7000e-004	0.0450	0.0119	2.5000e-004	0.0121		38.5231	38.5231	1.0800e-003	1.0400e-003	38.8596
Total	**0.0181**	**0.1077**	**0.1709**	**7.6000e-004**	**0.0575**	**1.2500e-003**	**0.0588**	**0.0156**	**1.1800e-003**	**0.0167**		**79.6775**	**79.6775**	**2.4500e-003**	**7.0100e-003**	**81.8278**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0124					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**0.2169**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5800e-003	0.0971	0.0331	3.8000e-004	0.0128	9.8000e-004	0.0138	3.6900e-003	9.3000e-004	4.6200e-003		41.1545	41.1545	1.3700e-003	5.9700e-003	42.9683
Worker	0.0145	0.0106	0.1378	3.8000e-004	0.0447	2.7000e-004	0.0450	0.0119	2.5000e-004	0.0121		38.5231	38.5231	1.0800e-003	1.0400e-003	38.8596
Total	**0.0181**	**0.1077**	**0.1709**	**7.6000e-004**	**0.0575**	**1.2500e-003**	**0.0588**	**0.0156**	**1.1800e-003**	**0.0167**		**79.6775**	**79.6775**	**2.4500e-003**	**7.0100e-003**	**81.8278**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4000e-004	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-004	1.2000e-004	0.0000		1.3000e-004
Unmitigated	2.4000e-004	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-004	1.2000e-004	0.0000		1.3000e-004

Joint Transmission Main Pump Station - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.0000e-005					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-004	1.2000e-004	0.0000		1.3000e-004
Total	**2.4000e-004**	**0.0000**	**6.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2000e-004**	**1.2000e-004**	**0.0000**		**1.3000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.0000e-005					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-004	1.2000e-004	0.0000		1.3000e-004
Total	**2.4000e-004**	**0.0000**	**6.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2000e-004**	**1.2000e-004**	**0.0000**		**1.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B-1
Species Lists

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Laguna Beach (3311757) OR San Juan Capistrano (3311756) OR Tustin (3311767) OR Canada Gobernadora (3311755) OR Dana Point (3311746) OR San Clemente (3311745) OR El Toro (3311766) OR Santiago Peak (3311765))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S3	WL
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2S3	SSC
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Aphanisma blitoides aphanisma	PDCHE02010	None	None	G3G4	S2	1B.2
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Asio otus long-eared owl	ABNSB13010	None	None	G5	S3?	SSC
Aspidoscelis hyperythra orange-throated whiptail	ARACJ02060	None	None	G5	S2S3	WL
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Astragalus brauntonii Braunton's milk-vetch	PDFAB0F1G0	Endangered	None	G2	S2	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
Atriplex pacifica south coast saltscale	PDCHE041C0	None	None	G4	S2	1B.2
Atriplex parishii Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
Atriplex serenana var. davidsonii Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Branchinecta sandiegonensis San Diego fairy shrimp	ICBRA03060	Endangered	None	G2	S2	
Brodiaea filifolia thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Calochortus weedii var. intermedius intermediate mariposa-lily	PMLIL0D1J1	None	None	G3G4T2	S3	1B.2
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	ABPBG02095	None	None	G5T3Q	S3	SSC
Canyon Live Oak Ravine Forest Canyon Live Oak Ravine Forest	CTT61350CA	None	None	G3	S3.3	
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Chaenactis glabriuscula var. orcuttiana Orcutt's pincushion	PDAST20095	None	None	G5T1T2	S1	1B.1
Chaetodipus californicus femoralis Dulzura pocket mouse	AMAFD05021	None	None	G5T3	S3	SSC
Chaetodipus fallax fallax northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	SSC
Choeronycteris mexicana Mexican long-tongued bat	AMACB02010	None	None	G3G4	S1	SSC
Chorizanthe polygonoides var. longispina long-spined spineflower	PDPGN040K1	None	None	G5T3	S3	1B.2
Cicindela latesignata western beach tiger beetle	IICOL02110	None	None	G2G3	S1	
Circus hudsonius northern harrier	ABNKC11011	None	None	G5	S3	SSC
Clinopodium chandleri San Miguel savory	PDLAM08030	None	None	G3	S2	1B.2
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
Comarostaphylis diversifolia ssp. diversifolia summer holly	PDERI0B011	None	None	G3T2	S2	1B.2
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S1S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Candidate	None	G4T2T3	S2S3	
Dipodomys stephensi Stephens' kangaroo rat	AMAFD03100	Endangered	Threatened	G2	S2	
Dudleya blochmaniae ssp. blochmaniae Blochman's dudleya	PDCRA04051	None	None	G3T2	S2	1B.1
Dudleya multicaulis many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
Dudleya stolonifera Laguna Beach dudleya	PDCRA040P0	Threatened	Threatened	G1	S1	1B.1
Dudleya viscida sticky dudleya	PDCRA040T0	None	None	G2	S2	1B.2
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eryngium pendletonense Pendleton button-celery	PDAPI0Z120	None	None	G1	S1	1B.1
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
Euphorbia misera cliff spurge	PDEUP0Q1B0	None	None	G5	S2	2B.2
Gila orcuttii arroyo chub	AFCJB13120	None	None	G2	S2	SSC
Harpagonella palmeri Palmer's grapplinghook	PDBOR0H010	None	None	G4	S3	4.2
Helianthus nuttallii ssp. parishii Los Angeles sunflower	PDAST4N102	None	None	G5TX	SX	1A
Hesperocyparis forbesii Tecate cypress	PGCUP040C0	None	None	G2	S2	1B.1
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Imperata brevifolia California satintail	PMPOA3D020	None	None	G4	S3	2B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Isocoma menziesii var. decumbens decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
Lasiurus blossevillii western red bat	AMACC05060	None	None	G4	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lepechinia cardiophylla heart-leaved pitcher sage	PDLAM0V020	None	None	G3	S2S3	1B.2
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Lycium brevipes var. hassei Santa Catalina Island desert-thorn	PDSOL0G0N0	None	None	G5T1Q	S1	3.1
Monardella hypoleuca ssp. intermedia intermediate monardella	PDLAM180A4	None	None	G4T2?	S2?	1B.3
Monardella macrantha ssp. hallii Hall's monardella	PDLAM180E1	None	None	G5T3	S3	1B.3
Myosurus minimus ssp. apus little mousetail	PDRAN0H031	None	None	G5T2Q	S2	3.1
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Nama stenocarpa mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
Nasturtium gambelii Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
Navarretia prostrata prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.2
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nolina cismontana chaparral nolina	PMAGA080E0	None	None	G3	S3	1B.2
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G5	S3	SSC
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Oncorhynchus mykiss irideus pop. 10 steelhead - southern California DPS	AFCHA0209J	Endangered	None	G5T1Q	S1	
Onychomys torridus ramona southern grasshopper mouse	AMAFF06022	None	None	G5T3	S3	SSC
Passerculus sandwichensis beldingi Belding's savannah sparrow	ABPBX99015	None	Endangered	G5T3	S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Pentachaeta aurea ssp. allenii Allen's pentachaeta	PDAST6X021	None	None	G4T1	S1	1B.1
Perognathus longimembris pacificus Pacific pocket mouse	AMAFD01042	Endangered	None	G5T1	S1	SSC
Phacelia keckii Santiago Peak phacelia	PDHYD0C4G1	None	None	G1	S1	1B.3
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Plestiodon skiltonianus interparietalis Coronado skink	ARACH01114	None	None	G5T5	S2S3	WL
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
Pseudognaphalium leucocephalum white rabbit-tobacco	PDAST440C0	None	None	G4	S2	2B.2
Quercus dumosa Nuttall's scrub oak	PDFAG050D0	None	None	G3	S3	1B.1
Rallus obsoletus levipes light-footed Ridgway's rail	ABNME05014	Endangered	Endangered	G3T1T2	S1	FP
Rhinichthys osculus ssp. 8 Santa Ana speckled dace	AFCJB3705K	None	None	G5T1	S1	SSC
Salvadora hexalepis virgultea coast patch-nosed snake	ARADB30033	None	None	G5T4	S2S3	SSC
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC
Sidalcea neomexicana salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
Sorex ornatus salicornicus southern California saltmarsh shrew	AMABA01104	None	None	G5T1?	S1	SSC
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Coastal Salt Marsh Southern Coastal Salt Marsh	CTT52120CA	None	None	G2	S2.1	
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Dune Scrub Southern Dune Scrub	CTT21330CA	None	None	G1	S1.1	
Southern Foredunes Southern Foredunes	CTT21230CA	None	None	G2	S2.1	
Southern Mixed Riparian Forest Southern Mixed Riparian Forest	CTT61340CA	None	None	G2	S2.1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Southern Riparian Scrub	CTT63300CA	None	None	G3	S3.2	
Southern Riparian Scrub						
Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Southern Sycamore Alder Riparian Woodland						
Spea hammondii	AAABF02020	None	None	G2G3	S3	SSC
western spadefoot						
Sternula antillarum browni	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
California least tern						
Streptocephalus woottoni	ICBRA07010	Endangered	None	G1G2	S1S2	
Riverside fairy shrimp						
Suaeda esteroa	PDCHE0P0D0	None	None	G3	S2	1B.2
estuary seablite						
Symphyotrichum defoliatum	PDASTE80C0	None	None	G2	S2	1B.2
San Bernardino aster						
Taricha torosa	AAAAF02032	None	None	G4	S4	SSC
Coast Range newt						
Taxidea taxus	AMAJF04010	None	None	G5	S3	SSC
American badger						
Thamnophis hammondii	ARADB36160	None	None	G4	S3S4	SSC
two-striped gartersnake						
Tryonia imitator	IMGASJ7040	None	None	G2	S2	
mimic tryonia (=California brackishwater snail)						
Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
Valley Needlegrass Grassland						
Verbesina dissita	PDAST9R050	Threatened	Threatened	G1G2	S1	1B.1
big-leaved crownbeard						
Vireo bellii pusillus	ABPBW01114	Endangered	Endangered	G5T2	S2	
least Bell's vireo						

Record Count: 117

Search Results

78 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [**3311757:3311765:3311767:3311766:3311745:3311755:3311746:3311756**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	PHOTO
Aphanisma blitoides	aphanisma	Chenopodiaceae	annual herb	Feb-Jun	None	None	G3G4	S2	1B.2	No Photo Available
Artemisia palmeri	San Diego sagewort	Asteraceae	perennial deciduous shrub	(Feb)May-Sep	None	None	G3?	S3?	4.2	No Photo Available
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	None	None	G4	S4	4.2	No Photo Available
Astragalus brauntonii	Braunton's milk-vetch	Fabaceae	perennial herb	Jan-Aug	FE	None	G2	S2	1B.1	No Photo Available
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	Mar-Oct	None	None	G3	S1S2	1B.2	No Photo Available
Atriplex pacifica	south coast saltscale	Chenopodiaceae	annual herb	Mar-Oct	None	None	G4	S2	1B.2	No Photo Available
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	None	None	G1G2	S1	1B.1	No Photo Available
Atriplex serenana var. *davidsonii*	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G5T1	S1	1B.2	No Photo Available
Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	FT	CE	G2	S2	1B.1	No Photo Available
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	None	None	G3G4	S3S4	4.2	No Photo Available
Calochortus plummerae	Plummer's mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G4	S4	4.2	No Photo Available
Calochortus weedii var. *intermedius*	intermediate mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G3G4T2	S3	1B.2	No Photo Available
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	Mar-May(Jun)	None	None	G4	S4	3	No Photo

										Available
Caulanthus simulans	Payson's jewelflower	Brassicaceae	annual herb	(Feb)Mar-May(Jun)	None	None	G4	S4	4.2	No Photo Available
Centromadia parryi ssp. *australis*	southern tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.1	No Photo Available
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	Asteraceae	annual herb	Jan-Aug	None	None	G5T1T2	S1	1B.1	No Photo Available
Chorizanthe leptotheca	Peninsular spineflower	Polygonaceae	annual herb	May-Aug	None	None	G3	S3	4.2	No Photo Available
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	Polygonaceae	annual herb	Apr-Jul	None	None	G5T3	S3	1B.2	No Photo Available
Cistanthe maritima	seaside cistanthe	Montiaceae	annual herb	(Feb)Mar-Jun(Aug)	None	None	G3G4	S3	4.2	No Photo Available
Clinopodium chandleri	San Miguel savory	Lamiaceae	perennial shrub	Mar-Jul	None	None	G3	S2	1B.2	No Photo Available
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	Ericaceae	perennial evergreen shrub	Apr-Jun	None	None	G3T2	S2	1B.2	No Photo Available
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2	No Photo Available
Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov	None	None	G4	S4	4.2	No Photo Available
Dichondra occidentalis	western dichondra	Convolvulaceae	perennial rhizomatous herb	(Jan)Mar-Jul	None	None	G3G4	S3S4	4.2	No Photo Available
Diplacus clevelandii	Cleveland's bush monkeyflower	Phrymaceae	perennial rhizomatous herb	Apr-Jul	None	None	G4	S4	4.2	 © 2020 W. Juergen Schrenk
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	Crassulaceae	perennial herb	Apr-Jun	None	None	G3T2	S2	1B.1	No Photo Available
Dudleya cymosa ssp. *ovatifolia*	Santa Monica dudleya	Crassulaceae	perennial herb	Mar-Jun	FT	None	G5T1	S1	1B.1	No Photo Available
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	None	None	G2	S2	1B.2	No Photo Available

Dudleya stolonifera	Laguna Beach dudleya	Crassulaceae	perennial stoloniferous herb	May-Jul	FT	CT	G1	S1	1B.1	No Photo Available
Dudleya viscida	sticky dudleya	Crassulaceae	perennial herb	May-Jun	None	None	G2	S2	1B.2	No Photo Available
Eryngium pendletonense	Pendleton button-celery	Apiaceae	perennial herb	Apr-Jun(Jul)	None	None	G1	S1	1B.1	No Photo Available
Erythranthe diffusa	Palomar monkeyflower	Phrymaceae	annual herb	Apr-Jun	None	None	G4	S3	4.3	 Ron Vanderhoff, 2019
Euphorbia misera	cliff spurge	Euphorbiaceae	perennial shrub	(Oct)Dec-Aug	None	None	G5	S2	2B.2	No Photo Available
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	None	None	G4	S3	4.2	No Photo Available
Helianthus nuttallii ssp. *parishii*	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	None	None	G5TX	SX	1A	No Photo Available
Hesperocyparis forbesii	Tecate cypress	Cupressaceae	perennial evergreen tree		None	None	G2	S2	1B.1	No Photo Available
Holocarpha virgata ssp. *elongata*	graceful tarplant	Asteraceae	annual herb	May-Nov	None	None	G5T3	S3	4.2	No Photo Available
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2	No Photo Available
Horkelia cuneata var. *puberula*	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	None	None	G4T1	S1	1B.1	No Photo Available
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G4	S3	2B.1	No Photo Available
Isocoma menziesii var. *decumbens*	decumbent goldenbush	Asteraceae	perennial shrub	Apr-Nov	None	None	G3G5T2T3	S2	1B.2	No Photo Available
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	No Photo Available
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	None	None	G5T5	S4	4.2	No Photo Available

Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1	No Photo Available
Lepechinia cardiophylla	heart-leaved pitcher sage	Lamiaceae	perennial shrub	Apr-Jul	None	None	G3	S2S3	1B.2	No Photo Available
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	None	None	G5T3	S3	4.3	No Photo Available
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	G2G3	S2S3	3	No Photo Available
Lilium humboldtii ssp. *ocellatum*	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4T4?	S4?	4.2	No Photo Available
Lycium brevipes var. *hassei*	Santa Catalina Island desert-thorn	Solanaceae	perennial deciduous shrub	Jun(Aug)	None	None	G5T1Q	S1	3.1	No Photo Available
Lycium californicum	California box-thorn	Solanaceae	perennial shrub	Mar-Aug(Dec)	None	None	G4	S4	4.2	No Photo Available
Malacothrix saxatilis var. *saxatilis*	cliff malacothrix	Asteraceae	perennial rhizomatous herb	Mar-Sep	None	None	G5T4	S4	4.2	No Photo Available
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	Asteraceae	annual herb	Mar-May	None	None	G4T4	S4	4.2	No Photo Available
Monardella hypoleuca ssp. *intermedia*	intermediate monardella	Lamiaceae	perennial rhizomatous herb	Apr-Sep	None	None	G4T2?	S2?	1B.3	No Photo Available
Monardella macrantha ssp. *hallii*	Hall's monardella	Lamiaceae	perennial rhizomatous herb	Jun-Oct	None	None	G5T3	S3	1B.3	No Photo Available
Myosurus minimus ssp. *apus*	little mousetail	Ranunculaceae	annual herb	Mar-Jun	None	None	G5T2Q	S2	3.1	No Photo Available
Nama stenocarpa	mud nama	Namaceae	annual/perennial herb	Jan-Jul	None	None	G4G5	S1S2	2B.2	No Photo Available
Nasturtium gambelii	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	FE	CT	G1	S1	1B.1	No Photo Available
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2	No Photo Available
Nolina cismontana	chaparral nolina	Ruscaceae	perennial evergreen shrub	(Mar)May-Jul	None	None	G3	S3	1B.2	No Photo Available
Orcuttia californica	California Orcutt grass	Poaceae	annual herb	Apr-Aug	FE	CE	G1	S1	1B.1	No Photo

	Orcutt grass									No Photo Available
Pentachaeta aurea ssp. *allenii*	Allen's pentachaeta	Asteraceae	annual herb	Mar-Jun	None	None	G4T1	S1	1B.1	 ©2008 Bob Allen
Pentachaeta aurea ssp. *aurea*	golden-rayed pentachaeta	Asteraceae	annual herb	Mar-Jul	None	None	G4T3	S3	4.2	No Photo Available
Phacelia hubbyi	Hubby's phacelia	Hydrophyllaceae	annual herb	Apr-Jul	None	None	G4	S4	4.2	No Photo Available
Phacelia keckii	Santiago Peak phacelia	Hydrophyllaceae	annual herb	May-Jul	None	None	G1	S1	1B.3	No Photo Available
Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	Hydrophyllaceae	perennial herb	Mar-Aug	None	None	G5?T3Q	S3	3.2	No Photo Available
Piperia cooperi	chaparral rein orchid	Orchidaceae	perennial herb	Mar-Jun	None	None	G3G4	S3S4	4.2	No Photo Available
Piperia leptopetala	narrow-petaled rein orchid	Orchidaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	No Photo Available
Polygala cornuta var. *fishiae*	Fish's milkwort	Polygalaceae	perennial deciduous shrub	May-Aug	None	None	G5T4	S4	4.3	No Photo Available
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	None	None	G4	S2	2B.2	No Photo Available
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	Feb-Apr(May-Aug)	None	None	G3	S3	1B.1	No Photo Available
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	None	None	G4	S4	4.2	No Photo Available
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2	No Photo Available
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	None	None	G4	S2	2B.2	No Photo Available
Suaeda esteroa	estuary seablite	Chenopodiaceae	perennial herb	(Jan-May)Jul-Oct	None	None	G3	S2	1B.2	No Photo Available
Suaeda taxifolia	woolly seablite	Chenopodiaceae	perennial evergreen shrub	Jan-Dec	None	None	G4	S4	4.2	No Photo Available

Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov	None	None	G2	S2	1B.2	No Photo Available
Verbesina dissita	big-leaved crownbeard	Asteraceae	perennial herb	(Mar)Apr-Jul	FT	CT	G1G2	S1	1B.1	No Photo Available
Viguiera laciniata	San Diego County viguiera	Asteraceae	perennial shrub	Feb-Jun(Aug)	None	None	G4	S4	4.3	No Photo Available

Showing 1 to 78 of 78 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v9-01 1.0). Website https://www.rareplants.cnps.org [accessed 13 December 2021].

Appendix B-2
Photo Log

Photo 1. View facing north towards the proposed pump station location.

Photo 2. Top of hillside, facing west towards the proposed pump station location.

Photo 3. Northwest view of the proposed pump station location and existing access road.

Photo 4. View south overlooking the proposed pump station location with existing water tank in background.

Appendix C

Negative Cultural Inventory Report

DUDEK
27372 CALLE ARROYO
SAN JUAN CAPISTRANO, CALIFORNIA 92675
T 949.450.2525 F 949.450.2626

February 21, 2022 13910

El Toro Water District
Contact: Hannah Ford
24251 Los Alisos Boulevard
Lake Forest, California, 9263

Subject: Negative Cultural Resources Inventory Report for the El Toro Water District Joint Transmission Main Pump Station Project, Orange County, California

Dear Ms. Ford,

This letter documents the negative cultural resources inventory conducted by Dudek for the El Toro Water District Joint Transmission Main Pump Station Project (Project), located at the northwestern corner of El Toro Road and Moulton Parkway in the City of Laguna Woods, Orange County, California (Figure 1). The El Toro Water District (ETWD) is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA). In accordance with CEQA, Dudek performed a Phase I cultural resources inventory for the entire area of potential effect (APE). The Project APE is approximately 0.49 acres and consists of the new pump station and associated improvements located at the ETWD R-2 site (Figure 2).

CEQA refers to sequential stages of cultural resources investigation, including Inventory, Evaluation, and Mitigation. Phase I (Inventory), Phase II (Evaluation), and Phase III (Mitigation) are vernacular terms used in the cultural resources industry. For the purposes of this report, Phase I is defined as an Inventory and includes archival research for archaeological resources and Tribal Cultural Resources, pedestrian surveys, and other inventory methods.

A records search was requested by Dudek at the South Central Coastal Information Center (SCCIC) for the proposed Project and a half-mile radius search buffer around the Project APE. The records search did not identify any cultural resources within the Project APE; however, one cultural resource site was located immediately adjacent to the Project APE. A Sacred Lands File (SLF) check was requested from the Native American Heritage Commission (NAHC) and the SLF search did not identify cultural resources for the Project. An intensive pedestrian survey of the Project APE did not identify any archaeological or built environment resources. The Project APE has been highly disturbed by the previous development of ETWD's R-2 site and associated water tanks.

Based on the current condition of the Project APE, the negative survey, negative SCCIC results, and negative SLF records search results, archaeological and Native American monitoring is not recommended for the proposed Project. The Project is unlikely to impact undiscovered cultural resources. In the unlikely event that cultural resources are encountered during exposure of subsurface soils, ground-disturbing work should be immediately halted in the area and a qualified archaeologist should be retained to evaluate the resources.

1 Project Description and Location

The Project site is generally located at the northwestern corner of El Toro Road and Moulton Parkway in the City of Laguna Woods, Orange County, California. The Project site falls within Section 32 of Township 6 South, Range 8 West of the San Juan Capistrano, California 7.5-minute U.S. Geological Survey Topographic Quadrangle Map (Figure 1).

The proposed Project involves the installation of a new pump station and associated improvements. The new pump station would be housed within a masonry block building that would also retain slopes to the north. The pump station would connect to the existing water mains on ETWD's R-2 site. The purpose of the project is to increase the reliability of water pressure in the northeast portion of ETWD's service area and would not result in an increase in ETWD's capacity. The Project APE is approximately 0.49 acres and encompasses a portion of ETWD's R-2 site (Figure 2).

2 Regulatory Framework

2.1 The California Register of Historic Resources (Public Resources Code section 5020 et seq.)

Under CEQA, the term "historical resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code section 5020.1(j)). In 1992, the California legislature established CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (California Public Resources Code section 5024.1(a)). A resource is eligible for listing in the CRHR if the State Historical Resources Commission determines that it is a significant resource and that it meets any of the following National Register of Historic Places (NRHP) criteria:

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

(California Public Resources Code section 5024.1(c).) Resources less than 50 years old are not considered for listing in the CRHR, but may be considered if it can be demonstrated that sufficient time has passed to understand the historical importance of the resource (see 14 CCR, section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally

designated as eligible for listing on the NRHP are automatically listed on the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys. The State Historic Preservation Officer maintains the CRHR.

2.2 Native American Historic Cultural Sites (California Public Resources Code section 5097 et seq.)

State law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the NRHC to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to 1 year in jail to deface or destroy an Indian historic or cultural site that is listed or may be eligible for listing in the CRHR.

2.3 California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act (California Repatriation Act), enacted in 2001, required all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The California Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate tribes.

2.4 California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological and historic resources:

1. California Public Resources Code section 21083.2(g): Defines “unique archaeological resource.”
2. California Public Resources Code section 21084.1 and CEQA Guidelines section 15064.5(a): Define historical resources. In addition, CEQA Guidelines section 15064.5(b) defines the phrase “substantial adverse change in the significance of an historical resource;” it also defines the circumstances when a project would materially impair the significance of a historical resource.
3. California Public Resources Code section 5097.98 and CEQA Guidelines section 15064.5(e): Set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
4. California Public Resources Code sections 21083.2(b)-(c) and CEQA Guidelines section 15126.4: Provide information regarding the mitigation framework for archaeological and historic resources, including options of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (California Public Resources Code section 21084.1; CEQA Guidelines section 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of California Public Resources Code section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (California Public Resources Code section 21084.1; CEQA Guidelines section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (California Public Resources Code section 21084.1; CEQA Guidelines section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines section 15064.5(b)(1); California Public Resources Code section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

See Section 1.2.2, below for a discussion of the CEQA guidelines for determining significance and mitigating impacts to unique archaeological resources.

2.5 California Health and Safety Code section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (section 7050.5b). If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (section 7050.5c). The NAHC will notify the Most Likely Descendant. With the permission of the landowner, the Most Likely Descendant may inspect the site of discovery. The inspection must be completed within 24 hours of notification of the Most Likely Descendant by the NAHC. The Most Likely Descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

2.6 Assembly Bill 52

California Assembly Bill 52, which took effect July 1, 2015, establishes a consultation process between California Native American Tribes and lead agencies in order to address tribal concerns regarding project impacts and mitigation to "tribal cultural resources" (TCR). Public Resources Code section 21074(a) defines TCRs and states that a project that has the potential to cause a substantial adverse change to a TCR is a project that may have an adverse effect on the environment. A TCR is defined as a site, feature, place, cultural landscape, sacred place, and object with cultural value to a California Native American tribe that is either:

1. listed or eligible for listing in the CRHR or a local register of historical resources, or
2. determined by a lead agency to be a TCR.

2.7 Guidelines for Determining Significance

According to CEQA (§15064.5b), a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. CEQA defines a substantial adverse change:

> Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

The significance of an historical resource is materially impaired when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR; or

- Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

Section 15064.5(c) of CEQA applies to effects on archaeological sites and contains the following additional provisions regarding archaeological sites:

- When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subsection (a).

- If a lead agency determines that the archaeological site is a historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.

- If an archaeological site does not meet the criteria defined in subsection (a), but does meet the definition of a unique archaeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c–f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.

- If an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or Environmental Impact Report (EIR), if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5(d) and (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides:

> When an initial study identifies the existence of, or the probable likelihood of, Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code SS5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:
>
> 1. The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5); and
>
> 2. The requirement of CEQA and the Coastal Act.

Under CEQA, an EIR is required to evaluate any impacts on unique archaeological resources (California Public Resources Code section 21083.2.) A "unique archaeological resource" is defined as:

> [A]n archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> 1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> 2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
>
> 3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

(California Public Resources Code section 21083.2(g)). An impact to a non-unique archaeological resource is not considered a significant environmental impact and such non-unique resources need not be further addressed in the EIR (Public Resources Code section 21083.2(a); CEQA Guidelines section 15064.5(c)(4)).

As stated above, CEQA contains rules for mitigation of "unique archaeological resources." For example, "[i]f it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following:

1. Planning construction to avoid archaeological sites.

2. Deeding archaeological sites into permanent conservation easements.

3. Capping or covering archaeological sites with a layer of soil before building on the sites.

4. Planning parks, greenspace, or other open space to incorporate archaeological sites." (Pub. Resources Code section 21083.2(b)(1)-(4).)

Public Resources Code section 21083.2(d) states that "[e]xcavation as mitigation shall be restricted to those parts of the unique archaeological resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a unique archaeological resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource, if this determination is documented in the environmental impact report."

The rules for mitigating impacts to archaeological resources to qualify as "historic resources" are slightly different. According to CEQA Guidelines section 15126.4(b), "[p]ublic agencies should, whenever feasible, seek to avoid damaging effects on any historic resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:

A. Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

B. Preservation in place may be accomplished by, but is not limited to, the following:

    1. Planning construction to avoid archaeological sites;

    2. Incorporation of sites within parks, greenspace, or other open space;

    3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site[; and]

    4. Deeding the site into a permanent conservation easement.

Thus, although section 21083.2 of the Public Resources Code, in addressing "unique archaeological sites," provides for specific mitigation options "in no order of preference," CEQA Guidelines section 15126.4(b), in addressing "historical resources of an archaeological nature," provides that "[p]reservation in place is the preferred manner of mitigating impacts to archaeological sites."

Under CEQA, "[w]hen data recovery through excavation is the only feasible mitigation," the lead agency may cause to be prepared and adopt a "data recovery plan," prior to any excavation being undertaken. The data recovery plan must make "provision for adequately recovering the scientifically consequential information from and about the historic resource." (CEQA Guidelines section 15126.4(b)(3)(C).) The data recovery plan also "must be deposited with the California Historical Resources Regional Information Center." (*Ibid*.) Further, "[i]f an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation." (*Ibid*.)

However, "[d]ata recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historic resource, provided that determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center." (CEQA Guidelines section 15126.4(b)(3)(D).)

3 Methods

3.1 Records Search

Dudek requested a records search at the South Central Coastal Information Center (SCCIC) for the Project APE and a half-mile radius buffer around the APE on December 9, 2021. The records search revealed that 21 previous cultural resources studies have been completed within a half-mile of the Project APE. Of the 21 studies, three of these previous studies intersect the current Project APE and are listed in Table 1 below. These studies include two cultural resources inventories and an Environmental Impact Report (EIR). Based on the previous studies, the entire APE has been studied. The studies that do not intersect the APE are included in Confidential Appendix A.

Table 1. Reports Intersecting Project APE

Report Number	Authors	Date	Title
OR-00113	Roger J. Desautels	1976	Archaeological Survey Report on the Proposed Iglesia Park Site Located at the End of Calle Iglesia in Laguna Hills
OR-00945	Ultrasystems Environmental Systems Division	1982	Rossmoor Business Park Liquidating Trust Properties Environmental Impact Report No. 496 SCH No. 88050424
OR-01129	David M. Van Horn	1982	Cultural Resource Assessment: The Koll Property Near Laguna Hills; a Possible Annexation Area for the City of Irvine and its Sphere of Influence

OR-00113

Scientific Resource Surveys, Inc. conducted an archaeological survey for the proposed Iglesia Park Site in 1976 which covered eight parcels of land (59.6 acres). The previous survey covered the entire APE of the current proposed

Project. The study revelated that the Project APE had undergone extensive earth movement as a large depression, approximately 20 feet in depth, had been bulldozed to accommodate two large enclosed water tanks and the soils removed were piled and banked to hide the tanks. During the pedestrian survey, archaeologist R. Desautels identified and recorded a prehistoric cultural resource, CA-ORA-000610. CA-ORA-000610 was recorded as a prehistoric campsite consisting of a patinated scraper, quartz cores, hammerstones, a handstone fragment and chipping waste. The artifacts were scattered on slopes around the edges of the water tanks. Based on field observations, R. Desautels determined that CA-ORA-000610 was likely located on the top of the knoll before the site was impacted and destroyed by the installation of the water tanks. It was recommended that an archaeological field test and evaluation should be conducted to determine the extent and nature of the remaining cultural resource.

OR-00945

Ultrasystems Environmental Systems Division prepared a draft EIR for the Rossmoor Business Park Liquidating Trust Properties (SCH NO. 88050424) in 1982 which covered the entire APE of the current proposed Project. The cultural resources section in the EIR was prepared using a survey conducted by David M. Van Horn in 1982. The EIR reveals that CA-ORA-000610 was destroyed during the grading and terracing activities for the water tanks. The survey conducted for the project did not reveal any artifacts as the area was graded and terraced, therefore, there would be no adverse impacts from development of the proposed project.

OR-01129

David M. Van Horn conducted a cultural resource assessment for the Koll Property in 1982 which covered the entire APE for the current proposed Project. During the survey it was revealed that CA-ORA-000610 which was mapped as being situated near the northwestern corner of the intersection of El Toro Road and the Moulton Parkway, should be regarded as totally destroyed as the hilltop has been graded, the top was removed to accommodate the water tanks, and the slopes below the water tanks have now been terraced. In summary, the environment of the Koll property and the current Project APE does not resemble that of prehistoric times. Inspection of CA-ORA-000610 determined that the deposit had been completely removed by grading for nursery terraces and by leveling of the hilltop for installation of a pair of water tanks.

Previously Recorded Resources

The SCCIC records search revealed that no recorded cultural resources have been recorded within the Project APE. The records search results did identify two cultural resources within the half-mile search buffer of the Project APE (Table 2). Of the total two resources identified in the half-mile buffer, one is a prehistoric resource, and one is a historic resource. The closest resource to the Project APE is P-30-000610, a prehistoric campsite located immediately adjacent and north of the Project APE. No historic addresses have been recorded within the Project APE. The results of the records search are included in Confidential Appendix A.

Table 2. Previously Recorded Cultural Resources in the Half-Mile Record Search Radius

Primary Number	Trinomial	Age	Description	In/ Out of APE
P-30-000610	CA-ORA-000610	Prehistoric	Campsite	Out

P-30-177526		Historic	Laguna County United Methodist Church	Out

CA-ORA-000610

As noted above, CA-ORA-000610 was recorded in 1976 as a remnant of a prehistoric campsite consisting of a patinated scraper, quartz cores, hammerstone, and chipping debris and is located immediately adjacent to the water tanks. As noted by David M. Van Horn in 1982, CA-ORA-000610 should be regarded as totally destroyed due to the grading activities for the installation of the water thanks and nursery terracing. The proposed current Project would not impact (direct or indirect) CA-ORA-000610.

3.2 Archival Research

Dudek consulted historic maps and aerial photographs to understand the development of the Project APE. Historic aerial photographs of the Project were available for 1938, 1946, 1952, 1963, 1967, 1972, 1980, 1981, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2002, 2003, 2004, 2005, 2009, 2010, 2012, 2014, 2016, and 2018 (NETR 2021). The 1938 to 1963 historic photographs do not show any development within the Project APE. The 1967 historic photograph reveals mass grading of the Project APE from the construction of two water tanks associated with ETWD's R-2 site. El Toro Road and Moulton Road also appear on the 1967 aerial. The 1972 aerial shows development of structures to the west and southeast of the APE. The 1980 aerial shows landscaping around the perimeter of the APE and terracing to the east of the APE. The 1992 aerial shows mass grading around the APE. The 1993 aerial shows landscaping around the APE. The 1994 to 1997 aerials do not reveal any changes to the APE. By 1998, nine structures appear to the north and east of the APE. The 1999 to 2018 aerials do not reveal any changes to the APE. The review of the historic aerial images demonstrates that the Project APE has undergone extensive earth movement from the construction of the water tanks and cutting for the nursery terracing and roads. No historic structures are located within the Project APE.

Historic topographic maps were also reviewed (earliest available is 1949) and do not show historic-age structures within the Project APE.

3.3 NAHC and Tribal Correspondence

Dudek requested a Native American Heritage Commission (NAHC) search of its Sacred Lands File (SLF) on December 9, 2021 for the Project APE. Results of the SLF search were received on February 7, 2022. The SLF search did not identify cultural resources for the Project. The NAHC also provided a contact list of Tribal individuals and/or organizations who may have knowledge of cultural resources in or near the Project.

In compliance with Assembly Bill 52 (AB 52), the City, as lead agency, is responsible for conducting government to government consultation with pertinent tribal entities. Two requests for AB52 consultation were received from the Juaneño Band of Mission Indian and the Gabrieleño Band of Mission Indians. AB 52 consultation efforts are currently ongoing. This letter report will be revised to include information obtained through consultation, as it becomes available.

3.4 Intensive Pedestrian Survey

Dudek archaeologist Adam Giacinto, M.A., RPA, conducted an intensive level pedestrian survey of the proposed Project APE on December 22, 2021. All survey work was conducted employing standard archaeological procedures and techniques consistent with the Secretary of the Interior Standards. Five-meter interval survey transects were conducted in a north-south direction for the project APE. Within the transects, the ground surface was examined for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of the current or former presence of structures or buildings (e.g., standing exterior walls, post holes, foundations), and historic artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials.

The Project APE consists of a portion of ETWD's R-2 site and adjacent slope located immediately northwest of the water tanks. The vegetation along the slope consists of ornamental landscaping and native vegetation. Irrigation lines were observed within the northwestern portion of the APE. A majority of the APE consists of asphalt-concrete pavement and a water tank associated with ETWD's R-2 site. The Project APE is highly disturbed as it has undergone extensive earth movement from the construction of the water tanks, cutting for the access road, and landscaping and irritation associated with ETWD's R-2 site. Additionally, much of the APE is paved due to the development of ETWD's R-2 site. The pedestrian survey did not identify any cultural resources within the Project APE. No historic structures or features were identified within the APE.

4 Summary and Management Considerations

4.1 Archaeological Recommendations

Dudek's Phase I cultural resources inventory of the Project indicates that there is low sensitivity for identifying intact subsurface cultural resource deposits during Project implementation. A records search from the SCCIC did not identify any cultural resources within the Project APE. A SLF check from the NAHC did not identify cultural resources for the Project. An intensive pedestrian survey did not identify any cultural resources within the Project APE. The Project APE has been highly disturbed by the previous development of ETWD's R-2 site and associated water tanks. No cultural or built environment resources are present within the Project APE.

As there are no cultural resources in the APE, no historical resources as defined under CEQA will be impacted by the Project. This includes no direct, indirect, or cumulative impacts. In consideration of the negative results of the SCCIC records search, archival research, and intensive-level survey, no further archaeological efforts or mitigation, including cultural resources construction monitoring, are recommended to be necessary in support of implementation of the Project.

Unanticipated Discovery of Archaeological Resources

In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the Project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards can evaluate the significance of the find. Construction activities may continue in other areas, but should be redirected a safe distance

from the find. If the new discovery is evaluated and found to be significant under CEQA and avoidance is not feasible, additional work such as data recovery may be warranted. In such an event, a data recovery plan should be developed by the qualified archaeologist in consultation with the ETWD and Native American representatives, if applicable. Ground disturbing work can continue in the area of the find only after impacts to the resources have been mitigated and with ETWD approval.

Unanticipated Discovery of Human Remains

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code Section 5097.98, the NAHC must immediately notify the person or persons it believes to be the MLD from the deceased Native American. The MLD shall complete inspection within 48 hours of being granted access to the site and make recommendations for the treatment and disposition, in consultation with the property owner, of the human remains.

Should you have any questions relating to this report and its findings, please do not hesitate to contact me at 619.949.3082 or kmontifolca@dudek.com.

Respectfully Submitted,

Keshia Montifolca, M.A., RPA

Archaeologist

Att: *Figure 1, Project Location*
Figure 2, APE Map
Figure 3, Slope within APE
Figure 4, Overview of APE
Figure 5, Water tanks
National Archaeological Database Information Sheet
Confidential Appendix A, SCCIC Records Search Results
Appendix B, NAHC Correspondence
cc: *Adam Giacinto, Micah Hale, Dudek*

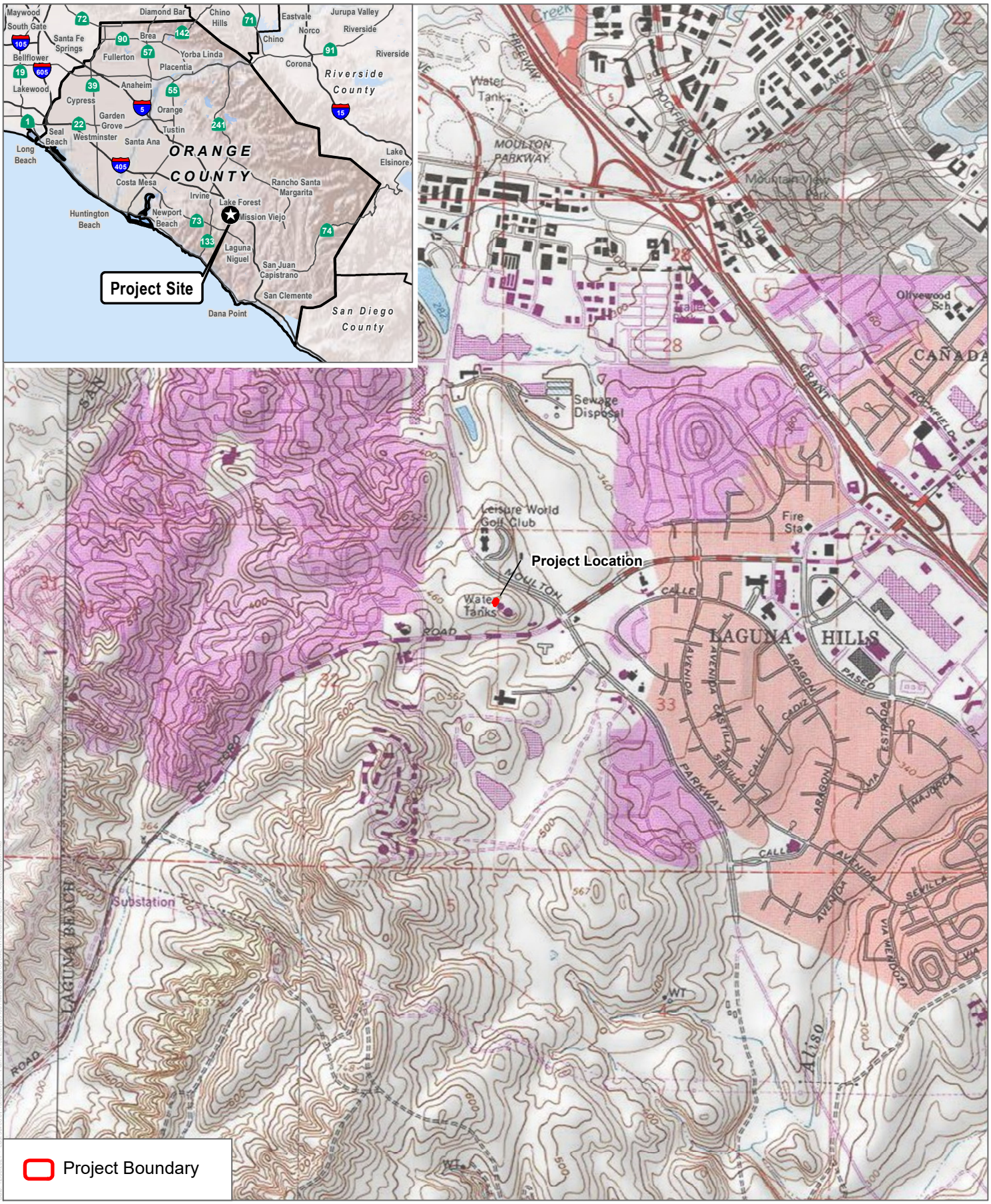
5 References

Desautels, Roger J. 1976. *Archaeological Survey Report on the Proposed Iglesia Park Site located at the end of Calle Iglesia in Language Hills.* On file at SCCIC.

NETR (National Environmental Title Research). 2021. Address search for El Toro Water District, Orange County, California. Accessed December 22, 2021 http://www.historicaerials.com/

Ultrasystems Environmental Systems Division. 1982. *Rossmoor Business Park Liquidating Trust Properties Environmental Impact Report No. 496 SCH No. 88050424.* On file at SCCIC.

Van Horn, David M. 1982. *Cultural Resource Assessment: The Knoll Property Near Laguna Hills; a Possible Annexation Area for the City of Irvine and its Sphere of Influence*. On file at SCCIC.



SOURCE: USGS 7.5-Minute Series San Juan Capistrano Quadrangle

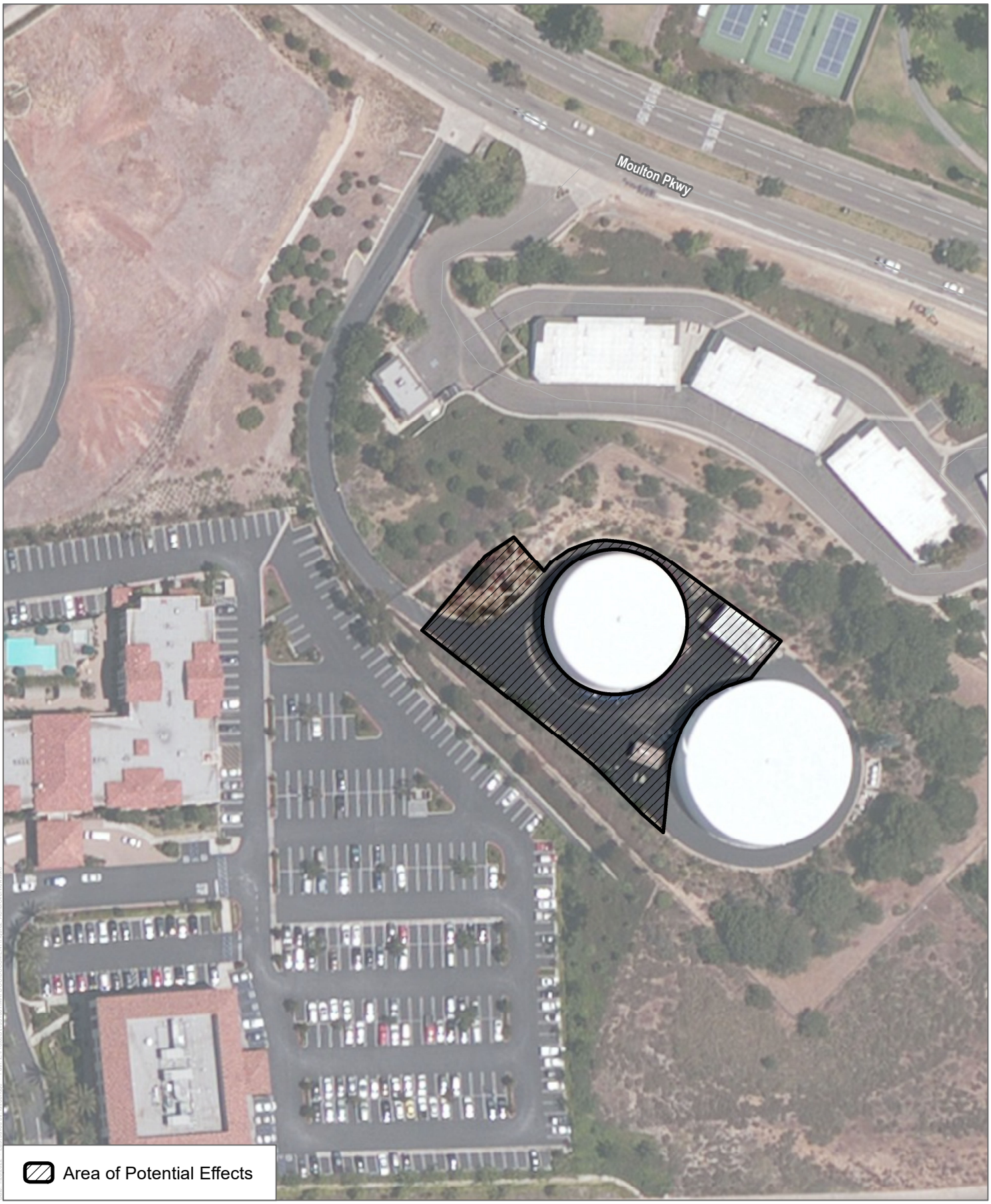
DUDEK

0 1,000 2,000 Feet
0 250 500 Meters

FIGURE 1

Project Location

El Toro Water District Joint Transmission Main Pump Station Project



SOURCE: Esri Clarity Basemap, OpenStreetMap

DUDEK

0 50 100 Feet

FIGURE 2

Aerial Overview

El Toro Water District Joint Transmission Main Pump Station Project

Figure 3. Slope within APE, view facing northwest

Figure 5. Overview of APE, water tanks to the east, view facing north.

Figure 6. Water tanks in the background.

National Archaeological Database (NADB) Information

Authors:	Keshia Montifolca, M.A., RPA
Firm:	Dudek
Project Proponent:	El Toro Water District
Report Date:	February 2022
Report Title:	Negative Cultural Resources Inventory Report for the El Toro Water District Joint Transmission Main Pump Station Project, Orange County, California
Type of Study:	Cultural Resources Inventory
Resources:	None
USGS Quads:	San Juan Capistrano, California, Township 6 South, Range 8 West, Section 32
Acreage:	0.49
Permit Numbers:	N/A
Keywords:	Pedestrian Survey, Inventory, Negative, Orange County, El Toro Water District

Confidential Appendix A

SCCIC Records Search Results

Appendix B

NAHC Correspondence and Tribal Outreach

NATIVE AMERICAN HERITAGE COMMISSION

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

February 7, 2022

Keshia Montifolca
Dudek

Via Email to: kmontifolca@dudek.com

Re: El Toro Water District Joint Transmission Main Pump Station Project, Orange County

Dear Ms. Montifolca:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

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

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Orange County
2/7/2022

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Christina Conley, Tribal Consultant and Administrator
P.O. Box 941078 Gabrielino
Simi Valley, CA, 93094
Phone: (626) 407 - 8761
christina.marsden@alumni.usc.edu

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street Gabrielino
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Phone: (310) 403 - 6048
roadkingcharles@aol.com

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Sonia Johnston, Chairperson
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Santa Ana, CA, 92799
sonia.johnston@sbcglobal.net

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Matias Belardes, Chairperson
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Juaneno Band of Mission Indians Acjachemen Nation - Belardes
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kaamalam@gmail.com

Juaneno Band of Mission Indians Acjachemen Nation 84A
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Phone: (562) 879 - 2884
hllucero105@gmail.com

La Jolla Band of Luiseno Indians
Norma Contreras, Chairperson
22000 Highway 76 Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 3771

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed El Toro Water District Joint Transmission Main Pump Station Project, Orange County.

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed El Toro Water District Joint Transmission Main Pump Station Project, Orange County.

Appendix D
Geotechnical Investigation

ASSOCIATED SOILS ENGINEERING, INC.
Consulting Geotechnical Engineers

REPORT OF GEOTECHNICAL INVESTIGATION

Proposed Joint Transmission Main Pump Station Project
at El Toro Water District (ETWD) Reservoir
24141 Moulton Parkway,
Laguna Woods, California

Prepared For:

Black & Veatch Corporation
5 Peters Canyon Road, Suite 300
Irvine, California 92606

Project No. 7046.22 **April 8, 2022**

2860 Walnut Avenue, Signal Hill CA 90755 * Tel: (562) 426-7990 * Fax: (562) 426-1842

ASSOCIATED SOILS ENGINEERING, INC.
Consulting Geotechnical Engineers

April 8, 2022
Project No. 7046.22

Black & Veatch, Inc.
5 Peters Canyon Road, Suite 300
Irvine, California 92606

Attn.: Mr. Kevin Reel

Subject: **REPORT OF GEOTECHNICAL INVESTIGATION**
Proposed Joint Transmission Main Pump Station Project
at El Toro Water District (ETWD) Reservoir
24141 Moulton Parkway, City of Laguna Woods, California

Ladies and Gentlemen:

Presented herewith is the Report of Geotechnical Investigation (the Soils Report) prepared by Associated Soils Engineering, Inc. (ASE) for the proposed Joint Transmission Main Pump Station (the Pump Station) to be located within the existing reservoir site at 24141 Moulton Parkway, in the City of Laguna Woods, California (the Site). This work was conducted in accordance with ASE's Proposal No. P21-212, dated December 13, 2021, and your subsequent authorization.

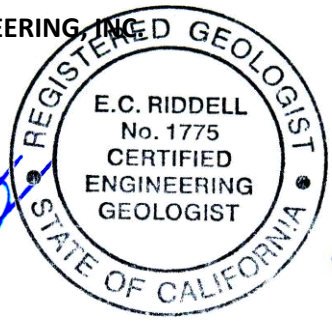
The subject geotechnical investigation was planned and performed based on the relevant development information provided by your office. Provided information consists of an image captured from Google Earth showing the location of the Pump Station with respect to the reservoir and a Conceptual Site Plan prepared by Black & Veatch Corporation.

The purpose of this study was to evaluate the subsurface soils conditions at the Site, followed by performance of engineering analyses and formulation/assembly of recommendations for the geotechnical design and construction of the Pump Station. ASE's study has concluded that construction of the Pump Station and appurtenant Structures are geotechnically feasible, provided that the recommendations and design guidelines with respect to site grading and foundation construction presented in the Soils Report are incorporated in the project plans and design and implemented during construction. This Soils Report summarizes: 1) the findings of the geotechnical field investigation, 2) the summary of potential geological/seismic hazard assessment, and 3) the results of laboratory tests performed.

We at ASE appreciate the opportunity to provide our professional services on this important project, and look forward to assisting you during site grading and construction of the Pump Station.

If you have any questions or require additional information, please contact the undersigned.

Respectfully submitted,
ASSOCIATED SOILS ENGINEERING, INC.



Edward C. (Ted) Riddell, P.G.
Engineering Geologist, CEG 1775

Lawrence J.D. Chang, P.E.
Geotechnical Engineer, RGE 2881

ECR/LC:tr

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1.0 INTRODUCTION

This Soils Report presents the results of ASE's geotechnical investigation for the proposed Joint Transmission Main Pump Station Project (Pump Station) to be located within the site of the El Toro Water District (ETWD) Reservoir site, at 24141 Moulton Parkway, in the City of Laguna Woods, California (the Site). The approximate location of the Site is shown on Figure 1, Site Location Map. The purpose of this investigation was to evaluate the general subsurface soil conditions at the Site and provide geotechnical recommendations for the design and construction of the Pump Station and appurtenant structures. This Soils Report presents the summary of data collected and the results of ASE's engineering evaluations/analyses, which provide the basis for the formulation of relevant geotechnical conclusions and recommendations.

1.1 Project Outline

The following project information is deemed applicable at the time of this Soils Report preparation.

1.1.1 Pump Station/Development Scope:

Based on previous projects of similar scope, ASE assumes that the Pump Station and electrical cabinets will be supported on concrete mat foundations and surrounding retaining wall will consist of reinforced concrete footings and masonry block construction. Appurtenant improvements are anticipated to include flatworks surrounding the Pump Station, pipeline trenches and underground utility conduits.

1.1.2 Structural Loading for Geotechnical Analyses:

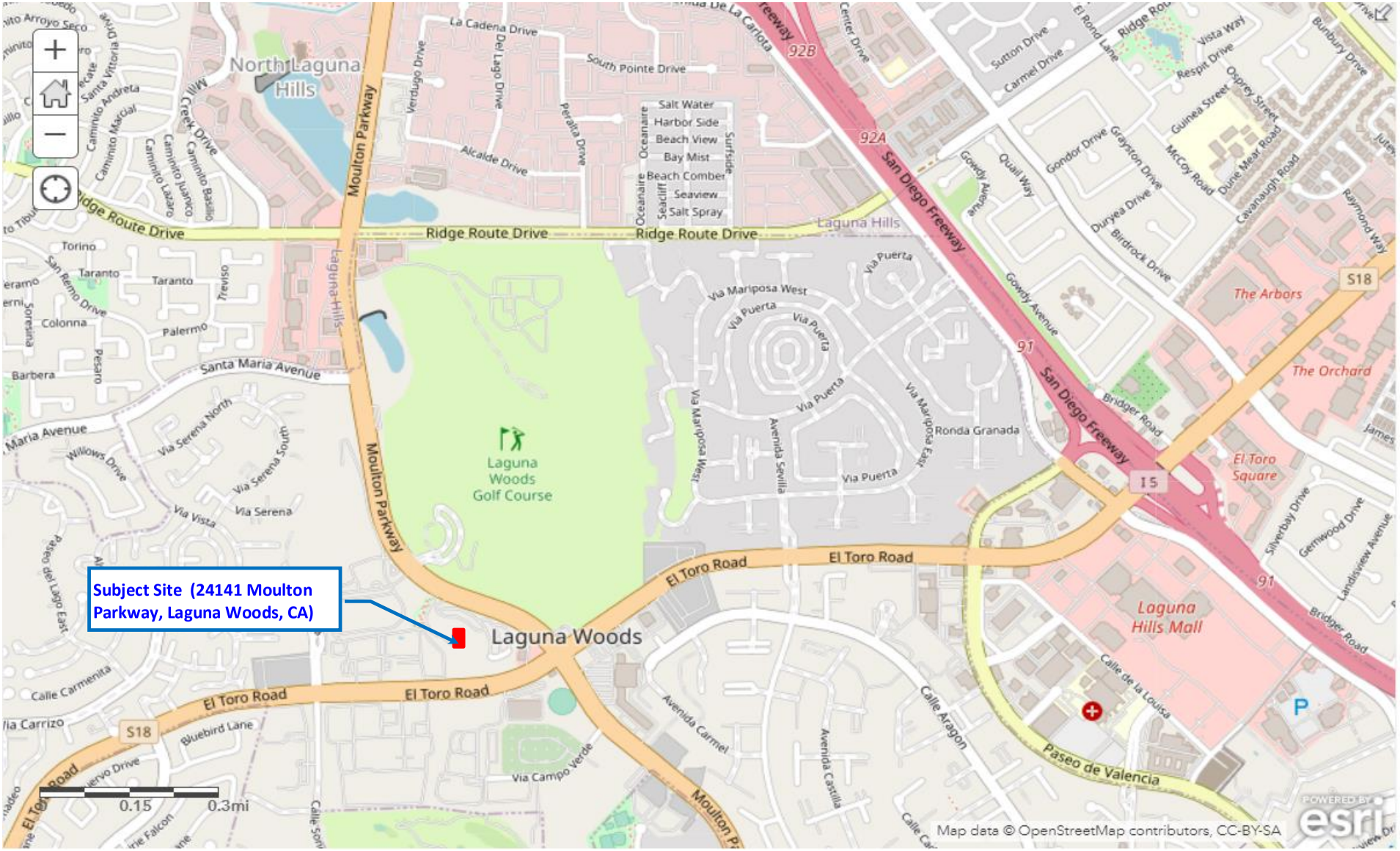
Based on the information previously provided to ASE, and for the purpose of relevant foundation analysis, surcharge loading on the order of 400 pounds per square foot (psf) has been used for analysis of the Pump Station when supported on reinforced concrete mat foundation.

In addition, ASE has assumed any secondary structures (i.e. site walls, posts, etc.) may be supported by isolated pad footings and/or continuous spread footings, with maximum concentrated column load (D + L) on the order of 10 kips, and with a maximum line load (D + L) not exceeding 1,500 pounds per linear foot. In response, tolerable total and differential settlements resulted from the aforementioned structural loadings have been assumed to be on the order of one (1) inch and one-third (1/3) inch over a 30-foot linear distance, respectively.

1.2 Scope of Exploration

In accomplishing the subject investigation, ASE's staff had performed the following geotechnical tasks:

A. Review of readily available background information, including in-house geotechnical data, geotechnical literature, geologic maps, seismic hazard maps, and literature relevant to the Site.



Associated Soils Engineering, Inc. **2860 Walnut Avenue** **Signal Hill, CA 90755** **Tel (562) 426-7990 Fax (562) 426-1842**	**Site Location Map**	Proj. Name:	**Proposed Pump Station** **24141 Moulton Pkwy., Laguna Woods**
		Figure 1	Proj. No.: **7046.22**
			Date: **April, 2022**

B. A geotechnical site reconnaissance to observe the general surficial soil conditions at the Site and to select and mark boring locations, followed by 72-hour advance notification to Underground Service Alert of the planned site exploration activities.

C. Field exploration consisting of drilling one (1) exploratory boring and two (2) hand dug test pits to depths varying from 2 feet 1 inch to 3 feet 4 inches below existing grade. ASE staff logged and sampled representative soils encountered in the exploratory boring and pits. Locations of the exploratory excavations are shown on the Boring Location Plan, Plate A, in Appendix A.

D. Laboratory testing on retrieved representative soil samples for classification and for determination of pertinent engineering properties.

E. Engineering analyses of data obtained from literature review, the site and laboratory testing covering the following aspects:

- Evaluation of general subsurface conditions and description of types, distribution, and engineering characteristics of subsurface materials.
- Assessment of geologic/seismic hazards based on the pertinent criteria required by the California Geological Survey (CGS).
- Determination of the seismic design parameters in accordance with Chapters 16 and 18 of the California Building Code, 2019 Edition (2019 CBC).
- Evaluation of the suitability of on-site soils for foundation support and establishment of qualification criteria of fill material, covering both on-site and imported soils.
- Recommendations for site remedial grading and subgrade preparation.
- Recommendations for design of concrete mat foundations and shallow conventional footing foundations including allowable bearing capacity, estimated settlement, and lateral resistance, and of slab-on-grade, covering design criteria and construction guidelines.
- Recommendations for design and construction of retaining walls.
- Recommendations for temporary excavation, shoring, and trenching.
- Evaluation of the corrosion and expansion potential of the on-site materials.

F. Preparation of this Soils Report presenting the work performed and data acquired, as well as summarizing our conclusions and geotechnical recommendations for subgrade preparation, design and construction of the Pump Station and appurtenant structures.

Please note that ASE's geotechnical investigation did not include any evaluation or assessment of hazardous or toxic materials which may or may not exist on or beneath the site. ASE does not consult in the field of potential site contamination/mitigation.

2.0 SITE AND SUBSURFACE CONDITIONS

2.1 Location

The Pump Station is to be located within the ETWD Reservoir compound located at 24141 Moulton Parkway in the City of Laguna Woods, California. The following information pertaining to site conditions was logged during the course of ASE's field work.

2.2 Boundary Conditions and Existing Development

The ETWD Reservoir site is located on the top of a ridge north of El Toro Road and southwest of Moulton Parkway. The reservoir site has been excavated into the existing ridgetop with graded 1:1 (horizontal:vertical) ascending slopes, approximately 15 to 20 feet above site grade, are north, west and southwest of the Site. It is proposed to excavate into the existing 1:1 ascending slope utilizing a retaining wall of approximately five (5) feet in height to create a flat pad for the Pump Station and electrical equipment.

The ETWD Reservoir site consists of two (2) reservoirs (3 million gallon (MG) reservoir P-1 and 2 MG reservoir P-2). The surface area around the reservoirs appears generally uniform and near level, and is covered with asphaltic concrete (AC) pavement. The AC pavement visually appears to be in good condition.

2.3 Subsurface Conditions

Please note that the subsurface soils descriptions presented hereunder have been interpreted from conditions exposed during the field investigation and/or information inferred from the reviewed geologic literature. As such, it is likely that not all of the subsurface conditions at the Site could be captured or represented. It is therefore essential that the Geotechnical Consultant's engineer or geologist be on site during grading and foundation construction such that information/recommendations deciphered during preliminary geotechnical investigation phase could be verified and, if necessary, amended as appropriate.

2.3.1 Artificial Fill (af):

Artificial fill was not observed in ASE's exploratory boring, but may be present at other areas of the Site, or could be encountered during site grading, subject to the observation and confirmation of the Geotechnical Consultant.

2.3.2 Vaqueros Formation (Tv):

Native site soils/bedrock consisting of the late Eocene to early Miocene Vaqueros Formation (Tv) were encountered on site below the asphaltic concrete (AC) pavement section in Boring B-1 and within the test pits B-P1 and B-P2 to the maximum explored depth of 3 feet 4 inches. Per Reference 4, the Vaqueros Formation is characterized generally as shallow marine deposits consisting of a

variety of shales, siltstones and sandstones. In specific, the on-site soils/bedrock consist of hard siltstones and moderately hard sandstone bedrock. The native soils/bedrock are in general in a damp to moist condition. Figure 2, Local Geologic Map, an excerpt from USGS (2006; Reference 22), shows geologic material distribution in the vicinity of the Site.

More detailed descriptions of soils encountered and conditions observed during the subsurface exploration are shown in the Field Log of Boring (Plate B-1) and Field Log of Test Pits (Plates B-P1 & B-P2) in Appendix A, together with information of soil classifications, depths and types of soil samples, field dry densities and moisture contents, and corresponding laboratory tests performed.

2.4 Groundwater and Caving

During field exploration, groundwater was not encountered to the maximum explored depth of 16 feet below existing grade in Boring B-1. Published data in Seismic Hazard Zone Report 053 for the San Juan Capistrano 7.5-Minute Quadrangle, Orange County, California by CGS (2001; Reference 4) is not definitive, but is outside of zones that are enclosed by groundwater contours at 10 and 20 feet below grade. Whereas the site is located atop a ridgeline, groundwater is not expected to be a factor in the proposed construction.

Caving and/or sloughing were not measured during the excavations. However, caving and/or soil sloughing may be possible in excavations greater in dimension than our exploratory excavations.

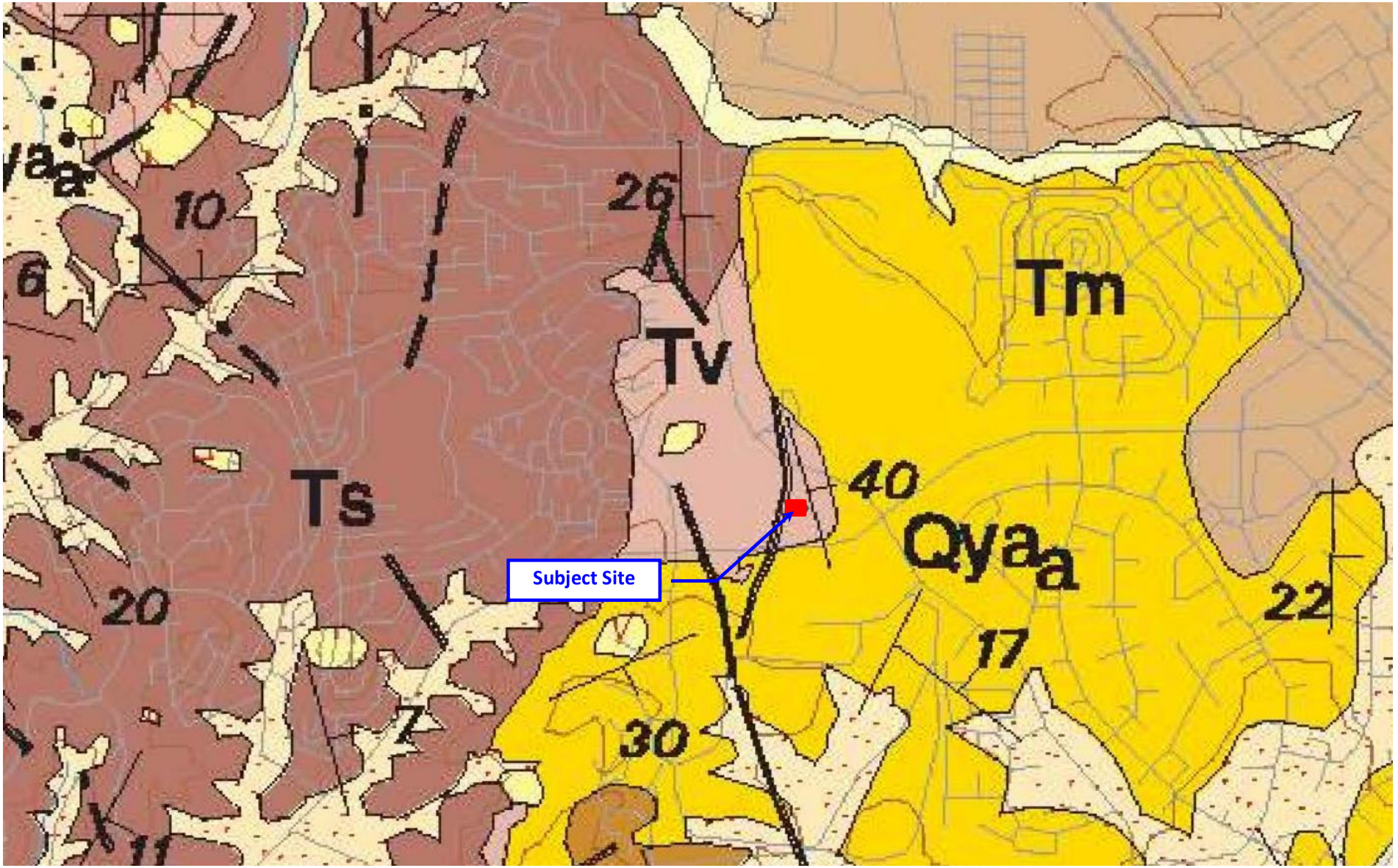
2.5 Utilities

No overhead or underground utilities were encountered within the area of ASE's on-site investigation. However, underground lines are present which service the existing site structures. Equipment and utility lines are also present which service/support on-site cell phone antennas. Irrigation lines are present in some areas along compound perimeters. Other utilities, though unknown at the time of this report preparation, may be present on site, and should be located prior to site development.

3.0 FAULTING AND SEISMICITY

The Laguna Woods area, like the rest of southern California, is located within a seismically active region as a result of being located near the active margin between the North American and Pacific tectonic plates. The principal source of seismic activity is movement along the northwest-trending regional faults such as the San Andreas, San Jacinto, Newport-Inglewood and Whittier-Elsinore fault zones.

By the definition of CGS, an active fault is one which has had surface displacement within the Holocene Epoch (roughly the last 11,000 years). The CGS has defined a potentially active fault as any fault which has been active during the Quaternary Period (approximately the last 1,600,000 years). These definitions are used in delineating Earthquake Fault Zones as mandated by the Alquist-Priolo Geologic Hazard Zones Act of



(Partial Extract of the Geologic Map of the San Bernardino and Santa Ana 30'x60'- Quadrangles ,U.S. Geologic Survey, Open File Report 2006-1217, 2006)

LEGEND

	Approximate Site Location
Tv	Early Miocene Vaqueros Formation comprised of marine arkosic sandstone with siltstone and shale interbeds.

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Project:	**Proposed Pump Station 24141 Moulton Parkway, Laguna Woods, CA**		
Figure 2	**Local Geologic Map**		
Proj. No.:	**7046.22**	Date:	**April, 2022**

1972 and as subsequently revised in 1997 as the Alquist-Priolo Earthquake Fault Zoning Act and Earthquake Fault Zones. The intent of the act is to require fault investigations on sites located within Special Studies Zones to preclude new construction of certain inhabited structures across the trace of active faults. The Site is not located within the Alquist-Priolo Earthquake Fault Zone. In addition, the Site is not located within a seismic hazard zone per CGS's mapping.

Several sources were researched for information pertaining to site seismicity. The majority of data was obtained from the program, EQFAULT, by Blake (2000) that allows for an estimation of peak horizontal ground acceleration (PGA) using a data file of approximately 150 digitized California faults. This program compiles information including the dominant type of faulting within a particular region, the maximum earthquake magnitude each fault is capable of generating, the estimated slip-rate for each fault, and the approximate location of the fault trace. Printouts of the Site fault search results are shown as Plates I-1 and I-2 in Appendix B.

3.1 Deterministic Analysis

The Site is likely to be subject to strong seismic ground shaking during the life of the project. Based on the referenced literature and deterministic analysis performed with the EQFAULT software, the San Joaquin Hills Fault, close to the Site at approximately 1.7 miles (2.8 km) away, would probably generate the most severe ground shaking. A Maximum Probable Earthquake (MPE), i.e. the maximum earthquake that is likely to occur during a 100-year time interval, of 6.6 Mw (moment magnitude as per USGS) has been assessed along the San Joaquin Hills Fault. As shown in Appendix B, estimated PGA from a MPE event on the San Joaquin Hills Fault is on the order of 0.592g should this event occur at the fault's closest approach to the Site. Other nearby active faults include the Newport-Inglewood (Offshore) Fault and Newport-Inglewood (LA Basin) Fault, located approximately 8.0 miles (12.9 km) and 11.3 miles (18.2 km) away, respectively. In sum, 38 active or potentially active faults have been identified within 62 miles (100 km) of the Site.

3.2 Probabilistic Analysis

The seismicity of the Site was evaluated utilizing probabilistic analysis available from CGS (www.quake.ca.gov/gmaps/PSHA/psha_interpolator.html). The Maximum Probable Earthquake (MPE) and the Maximum Considered Earthquake (MCE) that carry 10 percent and 2 percent exceedance probabilities, respectively, in 50 years have been considered. Based on a critical damping ratio of 5% and a V_s^{30} value of 515 m/sec, derived from the "Set Site Parameters for Web Services"'' function as part of the "Hazard Spectrum Calculator (Local)" application available from the "OPENSHA" website, three spectral acceleration values representing peak ground acceleration (PGA), spectral acceleration for structural period of 0.2 second (Sa – 0.2 sec; typical of low-rise buildings) and spectral acceleration for structural period of 1.0 second (Sa – 1.0 sec; typical of multi-story buildings) have been analyzed and are tabulated on next page.

Seismic Acceleration Values from CGS's Ground Motion Interpolator (2008)						
Latitude	Longitude	V_s^{30} (m/sec)	Scenario	Acceleration (g)		
				PGA	Sa – 0.2 sec	Sa – 1.0 sec
N 33.6107°	W 117.7287°	468	MPE [1]	0.579	0.749	0.307
			MCE [2]	0.626	1.437	0.600

1. MPE scenario carries a 10% exceedance probability in 50 years.
2. MCE scenario carries a 2% exceedance probability in 50 years.

3.3 2019 CBC Seismic Design Parameters

The earthquake design requirements listed in 2019 CBC and other governing standards account for faults classified as "active", in accordance with the most recent fault listing as per the United States Geological Survey (USGS) or the CGS. The seismic design of the proposed structures should be implemented in accordance with the applicable provisions stipulated in 2019 CBC unless otherwise specified by the governing authority having jurisdiction over the project. The 2019 CBC seismic design criteria for the Site based on a Site Class of "C", a Risk Category II and a scenario of Risk-Targeted Maximum Considered Earthquake (MCE_R) that carries a 2% exceedance probability in 50 years had been determined utilizing the U.S. Seismic Design Maps web-application available from the Seismic Design Maps and Tools webpage on the website of Earthquake Hazard Program of USGS (http://earthquake.usgs.gov/hazards/designmaps/usdesign.php). Summaries of the 2019 CBC seismic coefficients for the Site are tabulated below.

Site Latitude:	N 33.6107°	Site Longitude:	W 117.7287°	Risk Category [a]	II
Seismic Parameter				Recommended Value	
Site Class [b]				C	
Soil Profile Name [b]				Very Dense Soil & Soft Rock	
Site Coefficient, Fa [c]				1.2	
Site Coefficient, Fv [d]				1.5	
0.2-Second Spectral Response Acceleration, S_S [e]				1.218g	
1.0-Second Spectral Response Acceleration, S_1 [f]				0.438g	
Adjusted 0.2-Second Spectral Response Acceleration, S_{MS} [g]				1.462g	
Adjusted 1.0-Second Spectral Response Acceleration, S_{M1} [h]				0.657g	
Design 0.2-Second Spectral Response Acceleration, S_{DS} [i]				0.975g	
Design 1.0-Second Spectral Response Acceleration, S_{D1} [j]				0.438g	
Long -Period Transition Period, T_L [k]				8 sec	
Mapped MCE_G Geometric Mean Peak Ground Acceleration, PGA [l]				0.513g	
Site Coefficient, F_{PGA} [m]				1.2	
MCE_G Peak Ground Acceleration adjusted for Site Class Effect, PGA_M [n]				0.616g	
Risk Category			I or II or III		IV
Seismic Design Category based on SD_1 [o]			D		D
Seismic Design Category based on SD_1 [p]			D		D

a Per 2019 CBC Table 1604.5
b Per 2019 CBC Section 1613.2.2
c *Per 2019 CBC Table 1613.2.3(1). Note: If simplified design procedure of Section 12.14 of ASCE 7-16 is adopted, the Fa value should be determined per Section 12.14.8.1 of ASCE 7-16 with no need for Fv, S_{MS}, S_{M1} values.*
d Per 2019 CBC Table 1613.2.3(2), *provided Cs values are determined by Equations 12.8-2, 12.8-3 and 12.8-4 of ASCE 7-16.*
e Per 2019 CBC Figure 1613.2.1(1)
f Per 2019 CBC Figure 1613.2.1(2)
g Per 2019 CBC Equation 16-36
h Per 2019 CBC Equation 16-37
i Per 2019 CBC Equation 16-38
j Per 2019 CBC Equation 16-39
k Per ASCE 7-16 Figure 22-14
l Per ASCE 7-16 Figure 22-9
m Per ASCE 7-16 Table 11.8-1
n Per ASCE 7-16 Equation 11.8-1 = PGA x F_{PGA}
o Per 2019 CBC Table 1613.2.5 (1)
p Per 2019 CBC Table 1613.2.5 (2)

Please note that the values listing in the 2019 CBC Seismic Design Parameter table on the previous page reflect the invocation of exception stipulated in Section 11.4.8 of ASCE 7-16 (see Footnotes c and d beneath the table on the next page). If the structural design of the Improvements needs to comply with 2019 CBC and cannot be supported by the invoked exceptions, the Geotechnical Consultant should be contacted for performing additional, site-specific seismic hazard analysis such that values of site-specific design parameters could be established.

Seismic design parameters for Site Classes "D", "E" and "F" should be obtained from site-specific seismic hazard analysis unless exceptions stipulated in Section 11.4.8 of ASCE 7-16 are invoked. The values listed in the table on the previous page reflect such exception invocation (see Footnotes c and d beneath the table on the next page). If the structural design of the Tank/Improvements cannot be supported by the invoked exceptions, the Geotechnical Consultant should be contacted for performing additional, site-specific seismic hazard analysis such that values of site-specific seismic design parameters could be established.

4.0 GEOLOGIC HAZARDS

4.1 Surface Fault Rupture and Ground Shaking

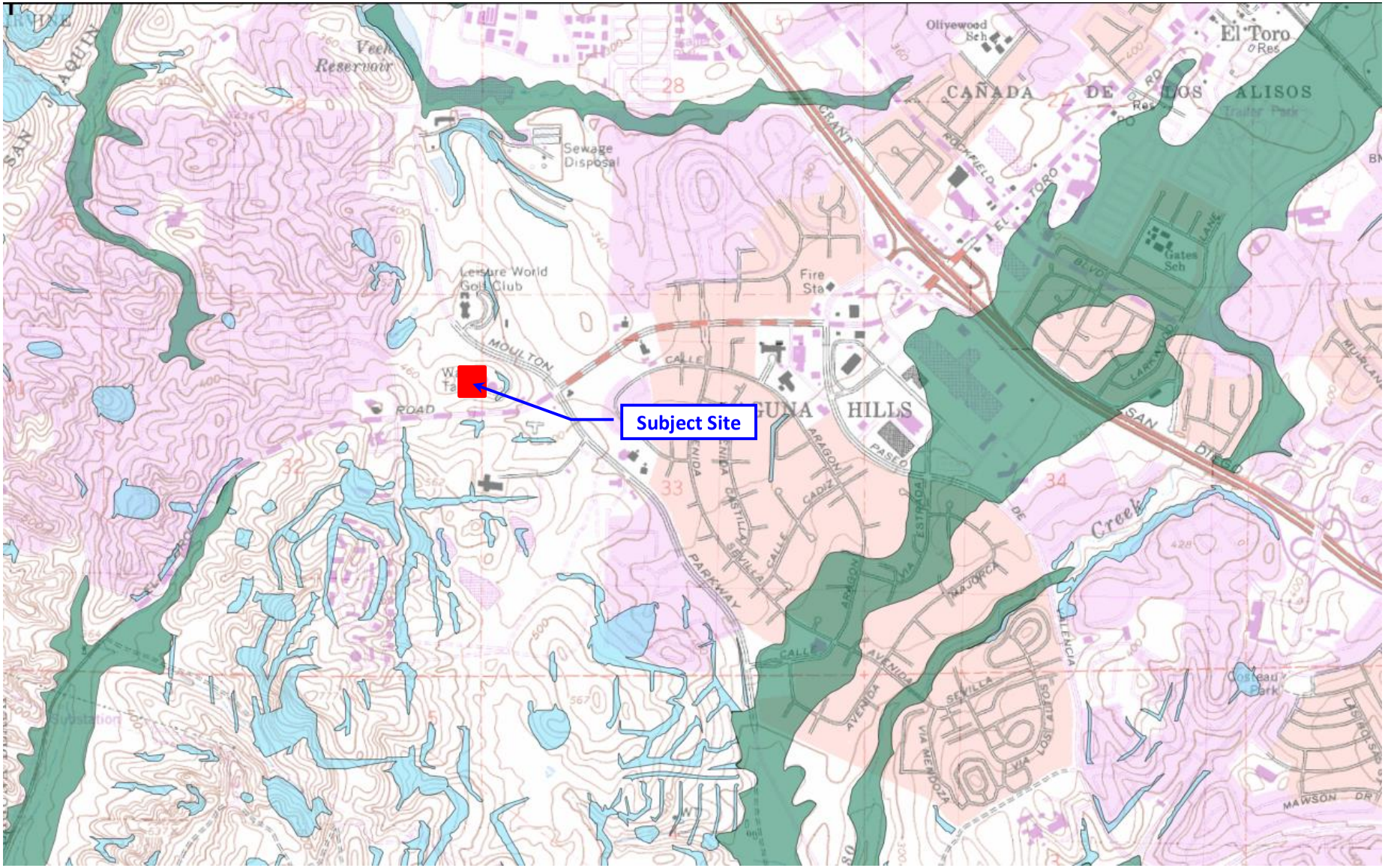
The subject Site is not located within an Alquist-Priolo Earthquake Fault Zone. No known active or potentially active faults are shown crossing the Site on published maps reviewed. No evidence for active faulting was encountered in the exploratory excavations performed during this evaluation. The risk of surface rupture at the Site is considered very low. Being in close proximity to several known active and potentially active faults, severe ground shaking should be expected during the life of the RMS Structure.

4.2 Seismic Hazards

4.2.1 Liquefaction:

The term "liquefaction" describes a phenomenon in which a saturated cohesionless soil loses strength and acquires a degree of mobility as a result of strong ground shaking during an earthquake. The factors knows to the influence liquefaction potential include soil type and depth, grain size, relative density, groundwater level, degree of saturation, and both the intensity and duration of ground shaking. The soils to the maximum explored depth of 3 feet 4 inches generally consist of moderately hard to hard siltstone bedrock that presents the "practical refusal" condition. Also, as evidenced in Figure 3, Local Seismic Hazard Map, the Site and the surrounding area is not within an area identified by CGS as having seismically-induced liquefaction potential upon the impact of a MPE or MCE event.

During ASE's field exploration, groundwater was not encountered to the maximum explored depth of 3 feet 4 inches below grade in Boring B-1. Per CGS's SHZR 053 (2001; Reference 4), historic high ground water in the vicinity of the Site is not definitive, but is outside zones marked by



(Partial Extract of the Earthquake Zones of Required Investigation San Juan Capistrano 7.5-Minute Quadrangle, California Geological Survey, dated 2001)

LEGEND					
Approximate Site Location Potential Landslide Hazard Area Potential Liquefaction Hazard Area Earthquake Fault Zone	ASSOCIATED SOILS ENGINEERING, INC. Consulting Geotechnical Engineers	**Associated Soils Engineering, Inc.** **2860 Walnut Avenue** **Signal Hill, CA 90755** **Tel (562) 426-7990 Fax (562) 426-1842**	Project:	**Proposed Pump Station** **24141 Moulton Parkway, Laguna Woods, CA**	
			Figure 3	**Local Seismic Hazard Map**	
			Proj. No.: **7046.22**	Date: **April, 2022**	

groundwater contour at 10 and 20 feet below grade that appear to be canyon/drainage course areas north and south of the property.

Considering that: 1) site soils are hard fine-grained siltstone bedrock and dense to very dense granular soils and sandstone bedrock that are expected to extend to great depth based on the local geologic setting; 2) historic high groundwater level appears to be greater than 50 feet deep; and 3) an earthquake magnitude of 6.6 Mw has been derived per EQFAULT software, the potential for the occurrence of seismically-induced liquefaction at the Site has been assessed to be nil, per the criteria stipulated in SP 117A (Reference 3).

4.2.2 Earthquake-Induced Landslides:

There is no indication that recent landslides or unstable slope conditions exist on or immediately adjacent to the project Site that would otherwise result in an obvious landslide hazard to the proposed development or adjacent properties.

ASE's review of the same geohazard map that was based upon for the production of Figure 3 indicates that the Site is not located within an area identified as having a potential for earthquake-induced landslides, however, there is an area to the east of the Site that has been identified as a potential landslide zone. Based on ASE's experience in the general vicinity of the Site, it is our opinion that the potential for earthquake-induced landslides in the future is low, although isolated surficial/wedge failures may occur on the ascending and descending slopes that surround the Site, but would be unlikely to affect the proposed construction of the Pump Station.

4.2.3 Seismic Settlements:

Ground accelerations emitted from a seismic event can cause densification of loose soils both above and below the groundwater table that may result in settlements on ground surface due to volumetric compression of soil mass. This phenomenon is often referred to as seismic settlement and commonly takes place in relatively clean sands, as well as soils with low plasticity and less fines. The native earth materials on site within the depths explored consist of hard fine-grained bedrock, and medium dense to very dense granular soils/bedrock. As such, settlement of on-site soils, as a result of seismically-induced densification (i.e. "dry" seismic settlement) is anticipated to be less than 1/8 inch, if not negligible.

4.2.4 Lateral Spreading:

Lateral spreading, a phenomenon associated with seismically-induced soil liquefaction, is a display of lateral displacement of soils due to inertial motion and lack of lateral support during or post liquefaction. It is typically exemplified by the formation of vertical cracks on the surface of liquefied

soils, and usually takes place on gently sloping ground or level ground with nearby free surface such as drainage or stream channel. Since there is no presence of "free surface" (unlined slopes, excavations, channels, etc.) on or near by the Site, and since the potential for liquefaction at the Site is nil, the potential for the occurrence of seismically-induced lateral spreading is unlikely on the Site.

4.2.5 Tsunamis and Seiches:

Due to the elevation of the Site and absence of nearby waterfront, hazard from a tsunami is considered very low.

Seiches are rhythmic movements of water within a lake or other enclosed or semi-enclosed body of water, generally caused by earthquakes. Since no lakes or other bodies of water lie on or near the site, the hazard from seiches is not present at the Site.

4.2.6 Flood Hazards:

The Site is located on the ESRII/FEMA Hazard Awareness site. Per ASE's review of FEMA Flood Insurance Rate Map No. 06059C0339J, dated December 3, 2009, the Site is not located within the 100-year floodplain.

5.0 GEOTECHNICAL CONSIDERATIONS AND RECOMMENDATIONS

Based on the results of field exploration, laboratory testing, and engineering analysis, it is ASE's geotechnical opinion that the construction of the Pump Station may be implemented as planned, provided that the ground preparation and foundation design criteria recommended herein are incorporated into the project plans and specifications and implemented during construction.

The major geotechnical factors affecting the design and construction of the proposed Pump Station include the following:

1. Soil disturbances as a result of site demolition, clearing and excavation operations.
2. Moderately hard to hard siltstone bedrock may pose difficulties in foundation excavations.

The grading recommendations provided herein should be reviewed when final project concept and grading plans become available. It is assumed that the proposed finish grades will be close to existing site grades (± 1 foot).

Thick concrete mat foundation, bearing on the firm, undisturbed native bedrock material may be considered for structural support of the Pump Station, whereas conventional footing foundation may be considered for supporting appurtenant structures, including retaining walls.

5.1 Site Preparation

5.1.1 Existing Improvements:

Prior to grading operations, it will be necessary to remove designated existing construction, including any remaining buried obstructions, which may be in the areas of proposed RMS Structure construction. Structure removal should include foundations. Concrete flatwork and asphalt pavement should also be removed from the areas of proposed construction. Concrete and asphalt fragments from site demolition operations should be disposed of off-site.

5.1.2 Surface Vegetation:

Surface vegetation should be stripped from areas of proposed construction. Stripping should penetrate six inches into surface soils. Any soil contaminated with organic matter (such as root systems or strippings mixed into the soil) should be disposed of off-site or set aside for future use in non-structural landscaped areas. Removal of trees and shrubs should include rootballs and attendant root systems.

5.1.3 Underground Utilities:

Any underground utilities to be abandoned within the zone of proposed construction should be cut off a minimum of 5 feet from the area of the new structures. The ends of cut-off lines should be plugged a minimum of 5 feet with concrete exhibiting minimum shrinkage characteristics to prevent water migration to or from hollow lines. Capping of lines may also be required should the plug be subject to any line pressure.

Alternatively, deep hollow lines may be left in place provided they are filled with concrete or 2-sack control density fill (slurry fill). No filled line should be permitted closer than two (2) feet from the bottom of future footings, unless it has been evaluated and approved by the Geotechnical Consultant. However, local ordinances relative to abandonment of underground utilities, if more restrictive, will supersede the above minimum requirements.

5.2 Site Grading

In view of minimizing the potential adverse effects associated with the development of excessive total or differential settlement or heave underneath the Pump Station, as well as to ensure uniform bearing competency for the foundations and slabs, preparation of on-site soils are recommended as follows.

5.2.1 Undocumented Fill/Disturbed Native Soils:

Although not observed in ASE's exploratory boring, any undocumented fill soil encountered during site grading in the Pump Station area, as well as any native soils disturbed during demolition and

clearing operations, should be excavated full depth under the observation and confirmation by the Geotechnical Consultant. Lateral extent of overexcavation beyond the Pump Station perimeters, where possible, should be to a minimum distance equal to the depth of undocumented fill/disturbed soil encountered or two (2) feet, whichever is greater. However, actual removal of undocumented fill or disturbed native soil, and confirmation of exposure of firm and unyielding native soils, shall be subjected to field verification by the Geotechnical Consultant at the time of site grading. For other secondary improvements such as free-standing walls or hardscape, the lateral extent of removal should be to a minimum distance equal to the depth of undocumented fill/disturbed soils encountered or one (1) foot, whichever is greater.

The exposed excavation bottom should be scarified/reworked to at least six (6) inches deep and recompacted to at least 90 percent relative compaction with a minimum moisture content of two (2) percentage points above optimum moisture content, prior to backfilling with approved soils as specified in Section 5.2.7. Unless otherwise stated, the measurement of relative compaction in this report should always refer to ASTM D1557-12 Test Method.

5.2.2 Expansive Soils:

Laboratory test results on a near surface soil sample indicate a "Low" soil expansion potential (i.e. Expansion Index, EI = 42 per ASTM D4829-19 Test Method) as defined in 2019 CBC. Lightly loaded structural elements such as shallow foundations for secondary structures and slabs are likely to undergo minor movements, at time unevenly, due to the "Low" expansion potential of site subgrade soils. It should be noted that design provisions, such as increased reinforcements, deeper foundations or other measures, may help to alleviate the undesirable effects of "Low" soils expansion on the slabs and structures but may not completely eliminate the problem. It is recommended that the soil expansion potential be reevaluated through additional testing during or after rough grading operations to verify the design adequacy of slab-on-grade against the re-tested soil expansion potential as heterogeneity within soil mass is not uncommon.

5.2.3 Remedial Grading:

a) Pump Station and Secondary Structures:

To provide acceptable support for Pump Station foundations, secondary structure foundations and slabs for areas where the foundation bottoms are to be underlain by firm native bedrock, trim neat to the required depth and width and remove all loose soils and debris to expose the firm native soils under the observation and confirmation by the Geotechnical Consultant's engineers or geologists. Areas that may require fill and/or a bedrock/fill transition exists, to reduce the potential adverse effect of undesirable "transition" situation between native soils and artificial fil beneath the foundations, it is recommended that on-site subgrade soils within

the footprint of the specific foundation element be overexcavated and recompacted to a minimum of one (1) foot below the bottom of the foundation. The overexcavation should extend laterally a minimum of one (1) foot beyond foundation perimeters. The exposed subgrade soils at the bottom of overexcavation should be trimmed neat and devoid of debris and should be tested to exhibit a minimum relative compaction of 90% prior to backfill and recompaction. The backfill soil should then be recompacted to at least 90% relative compaction with a minimum moisture content of one (1) percentage point over optimum moisture content. The overexcavation should extend laterally to a minimum distance of one (1) foot beyond foundation perimeters and secondary structure perimeters, where applicable.

b) Exterior Slabs-on-Grade/Concrete Flatwork/Hardscape/Pavements:

Subgrade soils to a depth of one (1) foot should be overexcavated and recompacted to at least 90 percent relative compaction with minimum moisture content of one (1) percentage points above optimum moisture content. The overexcavation should extend laterally at least one (1) foot beyond the footprint of the secondary improvements, wherever possible.

Soils exposed at excavation bottoms to six (6) inches deep should be scarified, reworked and recompacted to exhibit a minimum 90 percent relative compaction with a minimum moisture content of two (2) percentage points above the optimum moisture content prior to receiving fill placement. The exposed excavation bottom should be observed, tested, and approved by the Geotechnical Consultant prior to placing compacted fill. In case of the presence of localized loose soils, the overexcavation needs to be deepened accordingly to delete the loose soil condition. However, this deepened overexcavation may be terminated when the exposed native, undisturbed soils exhibit a natural relative compaction greater than 85 percent, subject to the testing and inspection by the representative from the Geotechnical Consultant.

The Geotechnical Consultant should be provided with appropriate foundation details and staking during grading to verify that depths and/or locations of the recommended overexcavation are adequate. For areas on site that grading recommendations stipulated in both Sections 5.2.1 and 5.2.3 apply, the more stringent grading criteria between the two sections should govern.

The depth of overexcavation should be reviewed by the Geotechnical Consultant during the actual construction. Any subsurface obstruction, buried structural elements, and unsuitable material encountered during grading, should be immediately brought to the attention of the Geotechnical Consultant for proper exposure, removal and processing, as recommended.

From geotechnical viewpoint, new landscape area with only softscape is not subject to subgrade preparation and remedial grading requirements mentioned in Sections 5.2.1 and 5.2.3.

5.2.4 Temporary Excavation:

Excavations of site soils 5 feet or deeper should be temporarily shored or sloped in accordance with Cal OSHA requirements.

a) Temporary Sloping:

In areas where excavations deeper than 5 feet are not adjacent to existing structures of public right-of-ways, sloping procedures may be utilized for temporary excavations. It is recommended that temporary slopes in native soils be graded no steeper than ½:1 (H:V) for excavations up to 15 feet in depth. The above temporary slope criteria is based on level soils conditions behind temporary slopes with no surcharge loading (structures, traffic) within a lateral distance behind the top of slope equivalent to the slope height.

It is recommended that excavated soils be placed a minimum lateral distance from top of slope/excavation equal to the height of slope/excavation. A minimum setback distance equivalent to the slope/excavation height should be maintained between the top of slope/excavation and heavy excavation/grading equipment. Should running sand conditions be experienced during excavation operations, flattening of cut slope faces, or other special procedures may be required to achieve stable, temporary slopes.

Soil conditions should be reviewed by the Geotechnical Consultant as excavation progresses to verify acceptability of temporary slopes. Final temporary cut slope design will be dependent upon the soil conditions encountered, construction procedures and schedule.

b) Temporary Shoring:

Temporary shoring will be required for those excavations where temporary sloping as specified above is not feasible.

Temporary cantilever shoring, if used, should be designed to resist an active earth pressure of 53 pounds per cubic foot (pcf) equivalent fluid pressure (EFP) for level soil conditions behind shoring. The resultant lateral deflection of shoring and surficial settlement immediately behind shoring are estimated to be on the order of one (1) to one and one half (1 1/2) percent of the shored excavation depth. Should this ground deformation be intolerable to the existing structure, ASE should be consulted for more detailed analysis and further recommendations.

The design shoring should also include surcharge loading effects of existing structures and anticipated traffic, including delivery and construction equipment, when loading is within a distance from the shoring equal to the depth of excavation. In addition, a minimum uniform lateral pressure of 100 psf in the upper ten (10) feet of shoring should be incorporated in the design when normal traffic is permitted within ten (10) feet of the shoring.

5.2.5 Suitable Soils and Imported Soils:

Any soil imported as fill for the completion of subgrade preparation should consist of predominantly "Very Low" to "Low" expansive (EI ≤ 50) material. All fill materials should be exhibiting a relatively uniform gradation, free of debris, particles greater than 4 inches in maximum dimension, organic matter or other deleterious materials.

Unless otherwise approved by the Geotechnical Consultant, any imported fill materials should also comply with the soil corrosivity criteria tabulated on the next page with respect to the desired concrete and reinforcement protection.

Corrosivity Criteria for Select Fill and General Fill			
Soluble Sulfate (% by weight) (1)	**Soluble Chloride (ppm) (2)**	**Resistivity Value (ohm-cm) (3)**	**pH-Value (4)**
≤ 0.1	≤ 500	≥ 2000	7.0 ~ 8.8

(1) California Test Method 417. (2) California Test Method 422. (3) ASTM G187-12a Test Method. (4) California Test Method 532.

Imported fill soils should be examined by a representative of this office, and tested as necessary for evaluating their suitability for use as fill prior to being hauled to the Site. Final acceptance of any imported soil will be based upon review and testing of the soil actually delivered to the Site. All blended soils to be used as fill must be tested and approved by the Geotechnical Consultant prior to being used for fill placement.

5.2.6 Backfilling and Compaction Requirements:

On-site soils, blended soils and import materials approved for use as fill per the criteria stipulated in Section 5.2.5 above should be placed in horizontal lifts not exceeding 8 inches in loose thickness, moisture conditioned to a minimum of two (2) percentage points above optimum moisture content and compacted to a minimum 90 percent relative compaction, per ASTM D1557-12 Test Method, unless otherwise stated.

5.2.7 Tests and Observations:

All subgrade preparation, compaction, and backfill operations should be performed under the observation of and testing by the Geotechnical Consultant's field representative. An adequate number of field tests should be taken to ensure compliance with this report and local ordinances.

If it is determined during grading that site soils require overexcavation to greater depths for obtaining proper support for the proposed structures, this additional work should be performed in accordance with the recommendations of the Geotechnical Consultant.

5.3 Foundation Design

It is ASE's opinion that concrete mat foundation may be used to provide support for the Pump Station, provided that the site grading recommendations presented in Section 5.2 above are incorporated in project planning and design, and implemented during site construction. Presented below are the recommended geotechnical design and construction criteria for concrete mat foundation for Pump Station and shallow footing foundation for of secondary structures (i.e. masonry screen walls, retaining walls, posts, etc.).

5.3.1 Mat Foundation Construction:

a) Allowable Soils Bearing Capacity:

A modulus of subgrade reaction (k-value) on the order of 180 psi/in with no size reduction factorand an allowable soil bearing capacity of 1,500 psf may be used in the design of the mat foundation when supported on firm and unyielding bedrock material or properly compacted fill. The allowable soil bearing capacity may be increased by one-third (1/3) when subjected to live load and/or short-term, transient loading from wind or seismic activities.

b) Mat Foundation Embedment:

Recommended minimum mat foundation embedment is twelve (12) inches below lowest adjacent finish soil grade. From a geotechnical viewpoint, as a minimum, the mat foundation should be reinforced with two (2) layers of No. 4 reinforcing bars placed near top and bottom of mat and spaced at 12 inches on centers each way. However, foundation design details such as a concrete strength, reinforcements, etc. should be established by the Structural Consultant.

c) Lateral Resistance:

Resistance to lateral loads can be assumed to be provided by passive lateral earth pressure and by friction acting on structural components in permanent contact with the subgrade soils.

For site preparation implemented as per recommended in the Section 5.23a) above, lateral resistance on the sides of mat foundations may be computed using a passive lateral earth pressure of 200 pcf EFP for footings embedded into approved compacted fill soils, subject to a maximum of 2,000 psf. An ultimate coefficient of friction on the order of 0.45 may also be used for structural dead load acting between the foundation bottom and the supporting base material. The above passive lateral earth pressure may be used in conjunction with the ultimate coefficient of friction in calculating composite lateral resistance, provided the passive lateral

earth pressure value is reduced by one-third (1/3). The composite lateral resistance may be increased by one-third (1/3) under short term, transient wind or seismic loading.

d) Static Settlements:

Total static settlements resulting from compression of subgrade soils for mat slab foundation designed and constructed in accordance with the above criteria, and assumed loading mentioned in Section 1.1.2 above, are not anticipated to exceed 1/2 inch and 1/4 inch at center and corner of mat slab, respectively, upon implementation of site preparation as per recommended in Section 6.2.3c) above. However, please be reminded that the Geotechnical Consultant should be contracted for further evaluation, as necessary, should final design structural loads exceed the maximum loads assumed in the above analyses by more than ten (10) percent.

5.3.2 Conventional Shallow Footing Foundation:

Presented below are the recommended geotechnical design and construction criteria for shallow footing foundation.

a) Minimum Footing Dimension and Reinforcement:

In order to mobilize sufficient soils bearing capacity supporting the new footings, and in view of the presence of "Low" expansive subgrade soils, it is recommended that the following tabulated minimum footing embedments, widths and reinforcements for various footing types be considered.

Minimum Footing Dimension & Reinforcement					
Continuous Spread Footing/Strip Footing			**Isolated Pad Footing**		
Depth (1) (in)	**Width (in)**	**Reinforcement (2)**	**Depth (1) (in)**	**Width (in)**	**Reinforcement (2)**
18	15	Four #4 bars – Two near the top and two near the bottom	18	24 square	Four #4 bars – two near the top and two near the bottom, applied bi-axially

(1) Footing embedment measured from the nearest adjacent lowest soils grade.
(2) Based strictly from geotechnical point of view.

Foundation design details such as concrete strength, reinforcements, etc. should be established by the Structural Consultant.

b) Allowable Soils Bearing Capacity:

For footings complying with the minimum dimension requirements stipulated in Section 6.3.2 a) above, the allowable soils bearing capacities, inclusive of both dead and live loads, should be as per tabulated on next page:

Allowable Soils Bearing Capacity (psf)		Increase per 12-inch Increment in Footing Width (psf)	Increase per 12-inch Increment in Footing Depth (psf)	Maximum Composite Ceiling Value (psf)
Continuous Spread Footing/Strip Footing	Isolated Pad Footing			
2,000	2,000	100	300	3,500

The allowable bearing capacities tabulated above may be increased by one-third (1/3) when subject to short-term, transient loading induced by wind or seismic activities.

c) Lateral Resistance:

Resistance to lateral loads can be assumed to be provided by passive lateral earth pressure and by friction acting on structural components in permanent contact with the subgrade soils.

For site preparation implemented as per recommended in the above Section 5.2.3), lateral resistance on the sides of foundations may be computed using a passive lateral earth pressure of 200 pcf EFP for footings embedded into approved compacted site soils, subject to a maximum of 2,000 psf. An ultimate coefficient of friction on the order of 0.45 may also be used for structural dead load acting between the footing bottom and the supporting compacted soils. The above passive lateral earth pressure may be used in conjunction with the ultimate coefficient of friction in calculating composite lateral resistance, provided the passive lateral earth pressure value is reduced by one-third (1/3). The composite lateral resistance may be increased by one-third (1/3) under short term, transient wind or seismic loading.

d) Static Settlements:

Total static settlements resulting from compression of subgrade soils for conventional footings designed and constructed in accordance with the above criteria, and supporting maximum provided dead plus live (D+L) column and wall loads mentioned in Section 1.1.2 above, are not anticipated to exceed 1/4 inch, upon implementation of site preparation as per recommended in Section 6.2.3c) above. A differential settlement on the order of 1/4 inch over a distance of 30 feet is anticipated between similarly loaded adjacent isolated pad footings, between isolated pad footings and continuous wall footings, and for continuous wall footings over a distance of approximately 30 feet. However, please be reminded that the Geotechnical Consultant should be contracted for further evaluation, as necessary, should final design structural loads exceed the maximum loads assumed in the above analyses by more than ten (10) percent.

5.3.3 Retaining Walls:

Cantilevered retaining walls and top-restrained retaining walls should be designed for “active” and “at-rest” lateral earth pressure values, respectively, tabulated below for approved granular backfill soils, different areas on the Site, and different backfill gradient conditions. Retaining walls subject

to uniform surcharge loads should be designed for an additional uniform lateral pressure equal to one-third (1/3) and one-half (1/2) of the anticipated surcharge pressure over the full retained height of the retaining wall (measuring from the top of wall to the heel of wall footing) for cantilevered and top-restrained wall fixity conditions, respectively, as depicted in Figure 4, Nearby Building Surcharge Consideration & Retaining Wall Drainage Details.

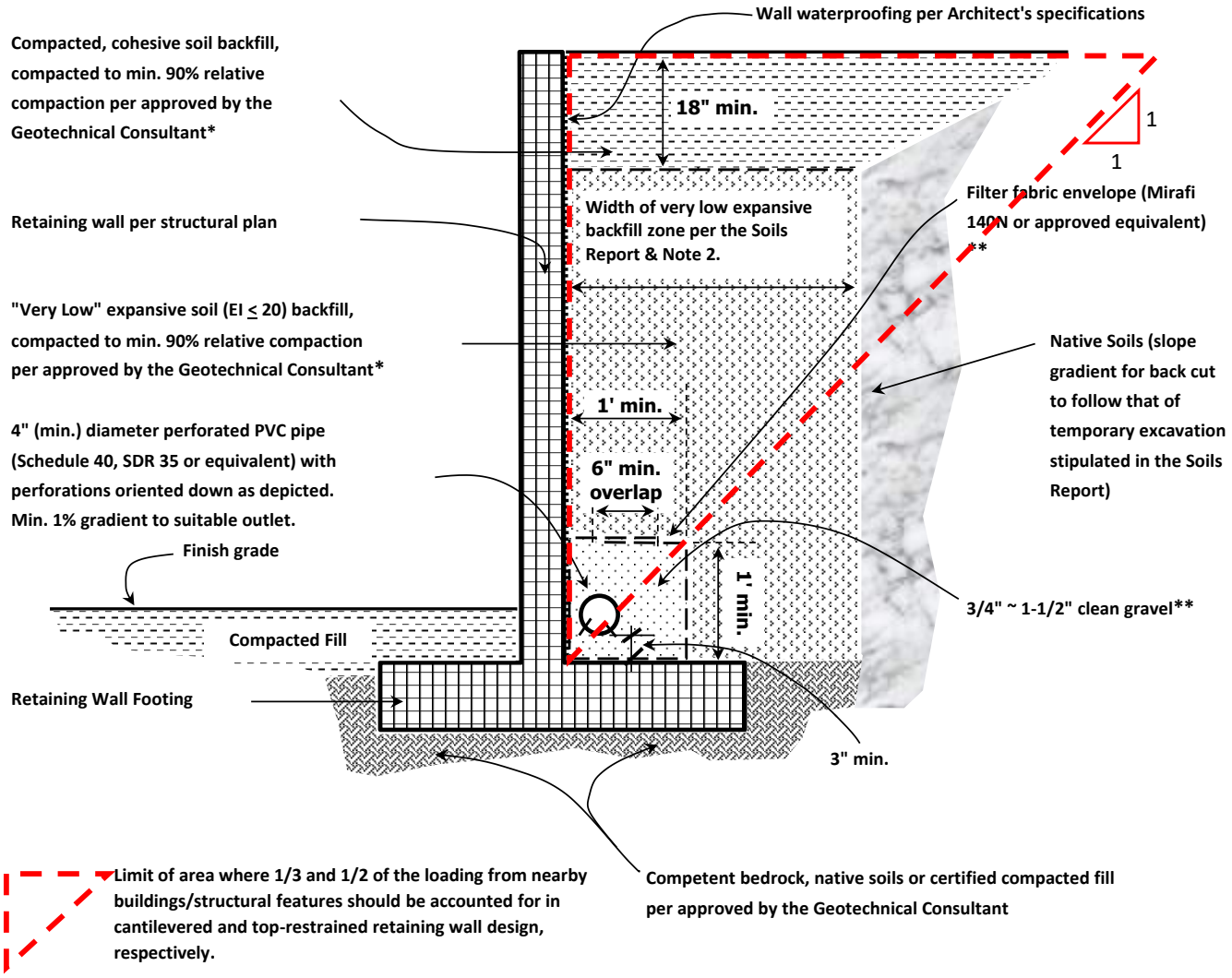
Retaining Wall Design Parametric Values & Recommendations	
Allowable Soils Bearing Capacity	2,000 psf (1)(2)
Active Pressure (Level Backfill/1H:1V Sloping Backfill)	31/53 pcf EFP (3)
At-rest Pressure (Level Backfill/1H:1V Sloping Backfill)	48/70 pcf EFP (3)
Passive Pressure (per foot of depth)	200 pcf EFP, subject to a ceiling value of 2,000 psf (4)
Coefficient of Friction	0.45 (4)
Minimum Footing Depth	18 inches
Minimum Footing Width	15 inches
Minimum Reinforcement	Four No. 4 rebars – 2 near top and 2 near bottom

(1) Based on compliance with earthwork recommendations per Section 5.2 of this Soils Report.
(2) Allowable soils bearing capacity increase for larger retaining wall footings should be as per stipulated in Section 5.3.2 b) above.
(3) Design values assuming a drained condition with "Very Low" expansive materials (EI ≤ 20) within the backfill zone and no surcharge loading conditions.
(4) Passive lateral earth pressure may be combined with frictional resistance provided the passive lateral earth pressure is reduced by 1/3.

For the design of retaining walls exceeding six (6) feet in retained height that need to account for seismic lateral earth pressure, the following recommendations for different soil conditions should be considered. Additional lateral earth pressures accounting for a "k_{eq}" value of 0.284g, based on a f_{eq} coefficient of 0.46 derived from Figure 1(b) of CGS's SP117a, a design "u" of 5 cm, and a PGA_M of 0.616g, and corresponding to 2 different wall fixity conditions as shown in the table below and Figure 5, Seismically Induced Lateral Earth Pressure Diagrams for Basement/Retaining Wall, should be considered for retaining wall design. The seismic active lateral earth pressure has been computed per the procedures proposed by Mononobe-Okabe (the "M-O" Method) and the seismic at-rest lateral earth pressure has been computed per the procedures proposed by Lew et al. (2010) (the "SEAOC" Method). The Structural Consultant should verify whether an acceptable factor of safety exists with the retaining wall structural design upon the impact of additional lateral earth pressure induced by the transient loading.

Method	Parametric Value [1]	Point of Application of Resultant Force [2]	Remark
M-O	$\Delta P_{AE} = 10\ H^2$ lb/ft	0.6H from base for ΔP_{AE}	1. Wall Fixity = "Cantilevered"
SEAOC	$\Delta P_{OE} = 20\ H^2$ lb/ft	1/3H from base for P_{OE}	1. Wall Fixity = "Top-Restrained"; 2. No ΔP_{OE} for H ≤ 12 ft; 3. No ΔP_{OE} for PGA < 0.4G; and 4. The P_{OE} = active lateral earth pressure + ΔP_{OE}.

1. H = Height of retaining wall measured from heel of retaining wall footing to top of wall.
2. Refer to Figure 5 for respective point of load application.



SPECIFICATIONS FOR CALTRANS CLASS II PERMEABLE MATERIAL	
U.S. STANDARD SIEVE SIZE	% PASSING
1"	100
3/4"	90 ~ 100
3/8"	40 ~ 100
No. 4	25 ~ 40
No. 8	18 ~ 33
No. 30	5 ~ 15
No. 50	0 ~ 7
No. 200	0 ~ 3
Sand Equivalent > 75	

* Based on ASTM D-1557-12

** If Caltrans Class II permeable material (see gradation to left) is used in place of 3/4" ~ 1-1/2" gravel, filter fabric may be deleted. Caltrans Class 2 permeable material should be compacted to minimum 90 percent relative compaction. Unless otherwise specified, a minimum of 1 cubic foot of gravel should be used for each 1 foot run of drain.

Note 1: Composite drainage products such as Contech C-Drain, Miradrain or J-Drain may be used as alternative to gravel or Class II. Installation should be performed in accordance with manufacturer's specifications.

Note 2: Width of " Very Low" expansion backfill equals 1/2 of retained height, or distance from back of wall to heel of footing, whichever is greater.

Schematic Not To Scale

ASSOCIATED SOILS ENGINEERING, INC.
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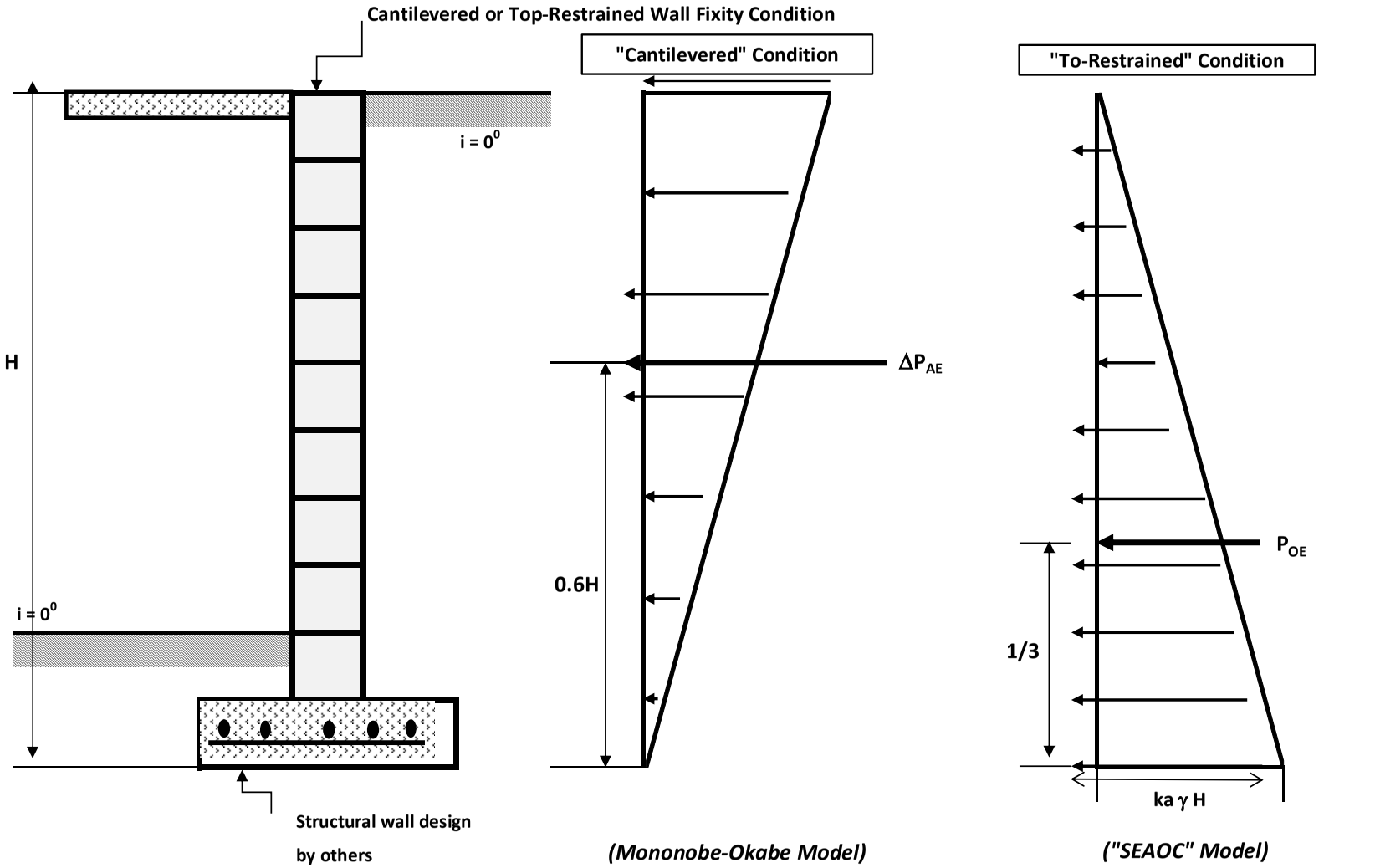
Project:	**Proposed Pump Station 24141 Moulton Pkwy., Laguna Woods**		
Figure 4	**Nearby Building Surcharge Consideration & Retaining Wall Drainage Details**		
Proj. No.:	**7046.22**	Date:	**March, 2022**



Schematic Not To Scale

Composite (Static + Seismic) Earth Pressure (P_{OE}) applied at 1/3H from base = Total Active Lateral Earth Pressure + Mononobe - Okabe Seismic Lateral Earth

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Seismically-Induced Lateral Earth Pressure Diagrams for Retaining Wall

Project Name:	Proposed Pump Station 24141 Moulton Pkwy., Laguna Woods
Figure 5	Project No.: 7046.22
	Date: April, 2022

The Geotechnical Consultant should be on-site during temporary back cut and retaining wall construction to inspect and evaluate the stability of cuts and, if necessary, to provide additional remedial or mitigative recommendations.

Preferably, the backfill should consist of approved "Very Low" expansive material (i.e. EI ≤ 20) and should be compacted to a minimum relative compaction of 90 percent. The width of the "Very Low" expansive backfill zone should be a minimum of one (1) foot measured from the rear side of the stem of the retaining wall, or the space between the rear side of the stem and the heel of the retaining wall, or one-half (1/2) of the retained height of the retaining wall, whichever is greater. Flooding or jetting of backfill should not be permitted. Granular backfill should be capped with 18 inches (minimum) of relatively impervious fill to seal the backfill and prevent saturation. Figure 4 illustrates the general configuration and requirements for retaining wall drainage. Should any conflict noticed between recommendations stated in this report and those shown in Figure 4, the fore should govern. Other retaining wall drainage alternatives may be considered but should first be reviewed and approved by the Geotechnical Consultant prior to implementation. Should the space behind the new retaining wall be too tight to implement the above recommended backfill effort, as an alternative, 1.5-sack control density fill (slurry fill) may be used in lieu of regular soil backfill, provided that the integrity and functionality of wall backdrain is protected and maintained.

It should be noted that the use of heavy compaction equipment in close proximity to earth retaining structures can result in wall pressures exceeding design values and corresponding wall movement greater than that normally associated with the development of active or at-rest conditions. In this regard, the contractor should take appropriate precautions during the backfill placement.

5.4 Slabs-on-Grade

Concrete flatwork supporting secondary improvement should be supported on properly compacted soils as recommended in the Site Grading section (i.e. Section 5.2.3.b) of this report. The slab subgrade soils should also be proof-rolled just prior to construction to provide a firm, unyielding surface, especially if the subgrade has been disturbed or loosened by the passage of construction traffic. Final compaction and testing of slab subgrade should be performed just prior to placement of concrete.

To minimize slab distress due to soil expansion, geotechnically, it would be prudent to provide a minimum, actual slab thickness of four (4) inches with minimum reinforcement consisting of number 3 reinforcing bars spaced maximum 18 inches on centers each way for slabs constructed on recompacted site soils. However, the final structural details, such as slab thickness, concrete strength, amount and type of reinforcements, joint spacing, etc., should be established by the Structural Consultant in accordance with pertinent sections in 2019 CBC.

Exterior slabs should be properly jointed to limit the number of concrete shrinkage cracks. For long/thin sections, such as sidewalks, expansion or control joints should be provided at spacing intervals equal to the width of the section. Slabs between 5 and 10 feet in minimum dimension should have a control joint at centerline. Slabs greater than 10 feet in minimum dimension should have joints such that unjointed sections do not exceed 10 feet in maximum dimension. Where flatwork adjoins structures, it is recommended that a foam joint or similar expansion material be utilized. Joint depth and spacing should conform to the ACI recommendations. It is, however, cautioned that uneven heaving of exterior slabs may develop in the future when prolonged irrigation or seepage permeates the subgrade soil, especially in areas that expansive soil pockets exist due to inadequate control or inspection of earthwork construction.

5.5 Site Drainage

Per Section 1804.4 of 2019 CBC, a minimum 5% descending gradient away from the Pump Station for a minimum distance of 10 feet should be incorporated for earth grade placed adjacent to the foundation. This descending gradient may be reduced to 2% for any impervious areas, such as concrete paved walkways, within the 10-foot zone. For areas where the 10-foot drainage distance is not attainable, alternative measure such as concrete-lined swales having a minimum 2% gradient may be adopted to divert the water away from the Pump Station, provided that a minimum 5% gradient is maintained in the distance between the structural footprint and the diversion measure such as swales. For more specific site drainage guidelines, the Project Civil Consultant should refer to the pertinent sections in 2019 CBC.

Any planter areas to be placed adjacent to structure perimeters should be provided with solid bottoms and a drainage pipe, to divert water away from foundation and slab subgrade soils. Excessive moisture variations in site soils could result in significant volume changes and movement.

5.6 Soil Corrosivity Evaluation

Soils corrosivity tests were performed on a representative sample of site soil. These tests are meant to determine the corrosive potential of on-site soils to proposed concrete foundations/flatwork and underground metal conduit. The soils corrosivity test results are presented in Appendix A.

5.6.1 Concrete Corrosion:

Disintegration of concrete may be attributed to the chemical reaction of soils sulfates and hydrated lime and calcium aluminate with the cement. The severity of the reaction resulting in expansion and disruption of the cement is primarily a function of the concentration of soluble sulfates and the water-cement ratio of the concrete.

A soluble sulfate content of 0.011% by weight has been recorded from testing per California Test Method (CTM) 417 conducted on on-site soils, as indicated in Appendix A. Per Table 19.3.1.1 of ACI

318-19, soils exhibiting soluble content less than 0.1% by weight are classified as having "Not Applicable" sulfate exposure and "S0" sulfate exposure category. As such, for structural features to be in direct contact with on-site soils, a "S0" sulfate exposure category is recommended to be considered and the pertinent concrete mix design criteria for "S0" sulfate exposure stipulated in Table 19.3.2.1 of ACI 318-19 should be complied with.

5.6.2 Metal Corrosion:

In the evaluation of soil corrosivity to metal, the hydrogen ion concentrates (pH) and the electrical resistivity of the site and backfill soils are the principal variables in determining the service life of ferrous metal conduit. The pH of soil and water is a measure of acidity or alkalinity, while the resistivity is a measure of the soils resistance to the flow of electrical current.

Currently available design charts indicate that corrosion rates decrease with increasing resistivities and increasing alkalinities. It can also be noted that for alkaline soils, the corrosion rate is more influenced by resistivity than by pH.

The resistivity value of 931 ohm-cm per ASTM G187-12a Test Method coupled with a pH-value of 7.88 per CTM 643 classifies the on-site soils tested to be very corrosive to buried ferrous metals. Based on CTM 643, the year to perforation for 18-gauge steel in contact with soils of similar resistivity and pH-value is 25 years for the on-site soils. In lieu of additional testing, alternative piping materials, i.e. plastic piping, may be used instead of metal if longer service life is desired or required for utility pipes and fittings in direct contact with on-site soils. These resistivity values of on-site soils may also have implications to other building materials and depths of embedment for steel reinforcement, etc. Therefore it might be desirable that a qualified corrosion consultant be engaged to review the building plans.

A soluble chloride content 25 ppm was recorded in our laboratory tests per CTM 422. Per Caltrans guidelines and specifications (References 15 and 16), soils exhibiting soluble chloride contents exceeding 500 ppm are considered "corrosive". The soils are thus classified as "non-corrosive" per Caltrans criterion. In addition, requirements in terms of rebar protection against chloride corrosion under Exposure Class "C0" stipulated in Tables 19.3.1.1 and 19.3.2.1 of ACI 318-19 should be considered based on the tested soluble chloride content.

5.7 Utility Trenches

All trenches should be backfilled with approved fill material compacted to relative compaction of not less than 90 percent of maximum dry density. Care should be taken during backfilling to prevent utility line damage. The on-site soils may be used for backfilling utility trenches from one foot above the top of pipe to the surface, provided the material is free of organic matter and deleterious substances. Any soft and/or

loose materials or fill encountered at pipe invert should be removed and replaced with properly compacted fill or adequate bedding material.

On-site soils are not considered suitable for bedding or shading of utilities. Imported soils for pipe bedding should consist of non-expansive granular soils. Bedding materials should consist of sand with a Sand Equivalent (S.E.) value per ASTM D2419-14 Test Method not less than 30.

If sandy soils are used for trench backfill, the backfill should be topped with a minimum 2-foot thick cap of compacted fine-grained soil. Also, a minimum 10-foot length of trench at the entrance and exit points of structures should be backfilled with fine-grained soils to serve as a plug to prevent water migration into structure foundation support zones.

The walls of temporary construction trenches are expected to be stable when excavated nearly vertical, with only minor sloughing, provided total excavation depth does not exceed four (4) feet. Shoring of excavation walls or flattening of slopes will be required if greater excavation depths are necessary.

Trenches should be located so as not to impair the bearing capacity of soils or cause settlement under foundations. As a guide, trenches parallel to foundations should be clear of a 45-degree plane extending outward and downward from the edge of the foundations. Please note that all work associated with trenches, excavations and shoring must also conform to the CAL-OSHA requirements.

5.8 Plan Review, Observations and Testing

As foundation and grading plans are completed, they should be forwarded to the Geotechnical Consultant for review of conformance with the intent of these recommendations.

All excavations should be observed by a representative of this office to verify minimum embedment depths, competency of bearing soils and that the excavations are free of loose and disturbed materials. Such observations should be made prior to placement of any fill, reinforcing steel or concrete. All grading and fill compaction should be observed, tested, and inspected by a Geotechnical Consultant's representative.

6.0 CLOSURE

This report has been prepared for the exclusive use of **Black & Veatch Corporation** (the Client) and their subconsultants for use in design and construction of the proposed Joint Transmission Main Pump Station Project (the Pump Station) at the ETWD Reservoir site. The report has not been prepared for use by other parties, and may not contain sufficient information for purposes of other parties.

The Client is responsible for ensuring the information and recommendations contained in this report are brought to the attention of the Owner or the other design consultants, incorporated into the project plans,

and implemented by project contractors. This report should be named on project plans as a part of the project specifications. Also, we request and recommend notification should any of the following occur:

1. Final plans for site development indicate utilization of areas not originally proposed for construction.
2. Structural loading conditions vary from those utilized for evaluation and preparation of this report.
3. The site is not developed within 12 months following the date of this report.

If changes or delays do occur, this office should be notified and provided with finalized plans of site development for our review to enable us to provide the necessary recommendations for additional work and/or updating of the report. Any charges for such review and necessary recommendations would be at the prevailing rate at the time of performing review work.

The findings contained in this report are based upon our evaluation and interpretation of the information obtained from the limited number of test borings and the results of laboratory testing and engineering analysis. As part of the engineering analysis it has been assumed, and is expected, that the geotechnical conditions existing across the area of study are similar to those encountered in the test excavations. However, no warranty is expressed or implied as to the conditions at locations or depths other than those excavated. Should conditions encountered during construction differ significantly from those described in this report, this office should be contacted timely for recommendations prior to continuation of work.

Our findings and recommendations were obtained in accordance with generally accepted current professional principles and local practice in geotechnical engineering and reflect our best professional judgment. We make no other warranty, either express or implied.

These recommendations are, however, dependent on the aforementioned assumption of uniformity and upon proper quality control of engineered fill and foundations. Geotechnical observations and testing should be provided on a continuous basis during grading at the site to confirm preliminary design assumptions and to verify conformance with the intent of our recommendations. If parties other than ASE are engaged to provide geotechnical services during construction, they must be informed that they will be required to assume complete responsibility for the geotechnical phase of the project by either concurring with the recommendations in this report or providing alternative recommendations.

This concludes our scope of services as indicated in our proposal dated December 21, 2021, however, our report is subject to review by the controlling authorities for the project. Any further geotechnical services that may be required of our office to respond to questions/comments of the controlling authorities after their review of the report will be performed on a time-and-expense basis as per our current fee schedule. We would not proceed with any response to report review comments/questions without authorization from your office. We appreciate your business and are prepared to assist you with construction-related services.

APPENDIX A

The following Appendices contain the substantiating data and laboratory test results to complement the engineering evaluations and recommendations contained in the report.

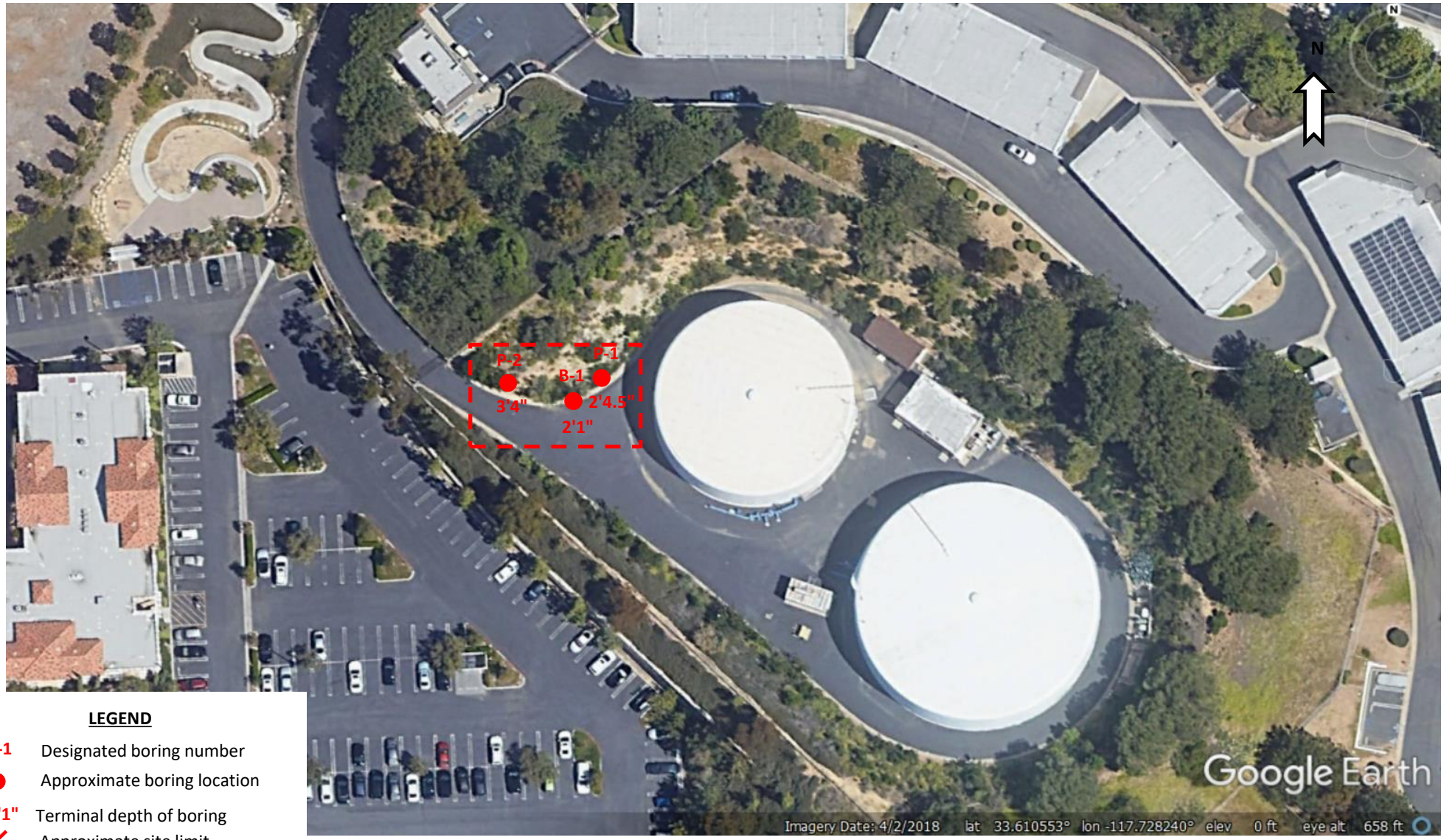
Site Exploration

On March 10, 2022, field exploration was performed by drilling one (1) test boring and two (2) hand dug test pits (B-P1 & B-P2) at the approximate locations indicated on the attached Boring Location Plan, Plate A. The exploratory boring was drilled/sampled by Associated Soils Engineering, Inc. (ASE), utilizing an electric core machine to penetrate the existing asphalt followed by utilizing manually operated drilling/sampling equipment with 3-inch diameter cutting bucket bits. The boring extended to a depth of 2 feet 1 inch from the existing grade, while the test pits extended to depths of 2 feet 4 inches (B-P1) to 3 feet 4 inches (B-P2).

Continuous observations of the materials encountered in the excavations were recorded in the field. The soils were classified in the field by visual and textural examination and these classifications were supplemented by obtaining bulk soil samples for future examination in the laboratory. Relatively undisturbed samples of soils were extracted in 2.5-inch I.D. thin-walled Shelby tubes. All samples were secured in moisture-resistant bags immediately after retrieval from exploratory boring to minimize the loss of field moisture, followed by timely transportation to ASE's laboratory for ensuing testing. Upon completion of exploration, the boring was backfilled with excavated materials and compacted by tamping, with existing pavement patched with cold-patch asphalt.

Description of the soils encountered, depth of samples, field density and moisture content of tested samples, respective laboratory tests performed, are presented in the attached Field Log of Boring (Plate B-1) and Field Log of Test Pits (B-P1 & B-P2).

Plate A	Boring Location Plan
Plate B-1	Field Log of Boring
Plates B-P1 & B-P2	Field Log of Test Pits



LEGEND

B-1 Designated boring number

● Approximate boring location

2'1" Terminal depth of boring

Approximate site limit

NOT TO SCALE

Associated Soils Engineering, Inc.

2860 Walnut Avenue

Signal Hill, CA 90755

Tel (562) 426-7990 Fax (562) 426-1842

Boring Location Plan

Project Name:	**Proposed Pump Station** **24141 Moulton Pkwy., Laguna Woods**	
Plate A	Proj. No.:	**7046.22**
	Date:	**April, 2022**

ASSOCIATED SOILS ENGINEERING, INC.

FIELD LOG OF BORING B-1

Sheet 1 of 1

Project: ***Proposed Pump Station-Laguna Woods***

Location: ***24141 Moulton Pkwy*** Project No. ***7046.22***

Dates(s) Drilled:	**3/10/22**	Logged By:	**Grant Zike**
Drilled By:	**Associated Soils Engineering,Inc.**	Total Depth:	**2 feet 1 inch**
Rig Make/Model:	**N/A**	Hammer Type:	**N/A**
Drilling Method:	**Manual Drilling Equipment**	Hammer Weight/Drop:	**N/A**
Hole Diameter:	**3 Inches**	Surface Elevation:	**Unknown**

Comments: Groundwater not encountered. No caving.

DEPTH (Ft.)	ELEVATION (MSL)	SAMPLE INTERVALS: BULK	SAMPLE INTERVALS: DRIVE	SAMPLE INTERVALS: TYPE, "N" or (Blows/ft.)	LITHOLOGY	USCS	GEOTECHNICAL DESCRIPTION	DRY DENSITY (Pcf)	MOISTURE CONTENT (%)	WELL COMPLETION	OTHER TESTS
0	0						ASPHALTIC CONCRETE PAVEMENT: 5.75'				
							AGGREGATE BASE MATERIAL: 5.75"				
						ML	CLAYEY SILT: Light yellowish brown,moist	95.9	15.4		
						ML	SILTSTONE: Light yellowish brown and light gray, moist	99.7	19.7		
5	5						DRILLING NOTE:Refusal reached at 2 feet 1 inch. Unable to further advance boring with manually operated hand auger equipment. Boring terminated.				

SOILS ENGINEERING, INC.

FIELD LOG OF BORING B-P1

Sheet 1 of 1

Project: ***Proposed Pump Station-Laguna Woods***

Location: ***24141 Moulton Pkwy*** Project No. ***7046.22***

Dates(s) Drilled:	**3/10/22**	Logged By:	**Grant Zike**
Drilled By:	**Associated Soils Engineering,Inc.**	Total Depth:	**2 feet 4 1/2 inches**
Rig Make/Model:	**N/A**	Hammer Type:	**N/A**
Drilling Method:	**Manual Drilling Equipment**	Hammer Weight/Drop:	**N/A**
Hole Diameter:	**6 inches**	Surface Elevation:	**Unknown**

Comments: Groundwater not encountered. No caving.

DEPTH (Ft.)	ELEVATION (MSL)	SAMPLE INTERVALS: BULK	SAMPLE INTERVALS: DRIVE	SAMPLE INTERVALS: TYPE, "N" or (Blows/ft.)	LITHOLOGY	USCS	GEOTECHNICAL DESCRIPTION	DRY DENSITY (Pcf)	MOISTURE CONTENT (%)	WELL COMPLETION	OTHER TESTS
0	0					ML	SILTSTONE: Light brown, moist	87.8	10.3		SHEAR
						ML	SILTSTONE: Light gray, moist	85.9	12.7		
							same as above	95.0	15.6		
							DRILLING NOTE:Refusal reached at 2 feet 4.5 inch. Unable to further advance boring with manually operated hand auger equipment. Boring terminated.				
5	5										

SOILS ENGINEERING, INC.

FIELD LOG OF BORING B-P2

Sheet 1 of 1

Project: ***Proposed Pump Station-Laguna Woods***

Location: ***24141 Moulton Pkwy*** Project No. ***7046.22***

Dates(s) Drilled:	**3/10/22**	Logged By:	**Grant Zike**
Drilled By:	**Associated Soils Engineering,Inc.**	Total Depth:	**3 feet 4 inches**
Rig Make/Model:	**N/A**	Hammer Type:	**N/A**
Drilling Method:	**Manual Drilling Equipment**	Hammer Weight/Drop:	**N/A**
Hole Diameter:	**6 inches**	Surface Elevation:	**Unknown**

Comments: Groundwater not encountered. No caving.

DEPTH (Ft.)	ELEVATION (MSL)	SAMPLE INTERVALS: BULK	SAMPLE INTERVALS: DRIVE	SAMPLE INTERVALS: TYPE, "N" or (Blows/ft.)	LITHOLOGY	USCS	GEOTECHNICAL DESCRIPTION	DRY DENSITY (Pcf)	MOISTURE CONTENT (%)	WELL COMPLETION	OTHER TESTS
0	0					SM	SANDSTONE: Yellow,moist,fine to medium-grained sand, with rootlets and trace clay	80.3	17.1		SHEAR
						ML		75.9	23.9		
							SILTSTONE: Light gray, moist				
							same as above,pale yellow	102.7	10.1		SHEAR
							DRILLING NOTE:Refusal reached at 3 feet 4 inch. Unable to further advance boring with manually operated hand auger equipment. Boring terminated.				
5	5										

Laboratory Tests

After samples were visually classified in the laboratory, a testing program that would provide sufficient data for our evaluation was established.

- Moisture Content and Density Tests

The undisturbed soil retained within the rings of the Modified California barrel sampler was tested in the laboratory to determine in-place dry density and moisture content. Test results are presented on the Field Log of Boring (see attached Plate B-1) and Field Log of Test Pits (B-P1 & B-P2).

- Direct Shear Tests

Direct shear (ASTM D 3080-11 Test Method) tests were performed on selected relatively undisturbed and remolded samples to determine the settlement characteristics and shear strength parameters of various soil samples, respectively. The results of these tests are shown graphically on the appended "D" Plates.

- Soil Corrosivity Tests

Tests of soluble sulfate and chloride contents were performed in accordance with the latest edition of CTM's 417 and 422, respectively, to assess the degree of corrosivity of the subgrade soils with regard to concrete and normal grade steel. Resistivity and pH-value tests were performed in accordance with the latest edition of ASTM G187-12a Test Method and CTM 643, respectively, to assess the degree of corrosivity of the subgrade soils with regard to ferrous metal piping. The test results are presented below.

Sample ID	Sulfate Content [1] (%)/ Degree of Severity	Chloride Content [2] (ppm) / Degree of Severity	Resistivity [3] (OHM-cm)/ Degree of Corrosivity	Ph-Value[4]
B-1 @ 0.5'-2'	0.011/Not Applicable	25/Not Applicable	931/Very Corrosive	7.88

(1) California Test Method 417. (2) California Test Method 422. (3) ASTM G187-12a Test Method. (4) California Test Method 643.

- Maximum Dry Density/Optimum Moisture Content Test

A maximum density test was conducted in accordance with ASTM D1557-12 Test Method, Method A, using 5 equal layers, 25 blows each layer, 10-pound hammer, 18 inch drop in a 1/30 cubic foot mold. The results are as follows:

Sample ID	Maximum Dry Density (pcf)	Optimum Moisture Content (%)	Material Classification
B-1 @ 0.5'-5'	109.0	17.5	ML

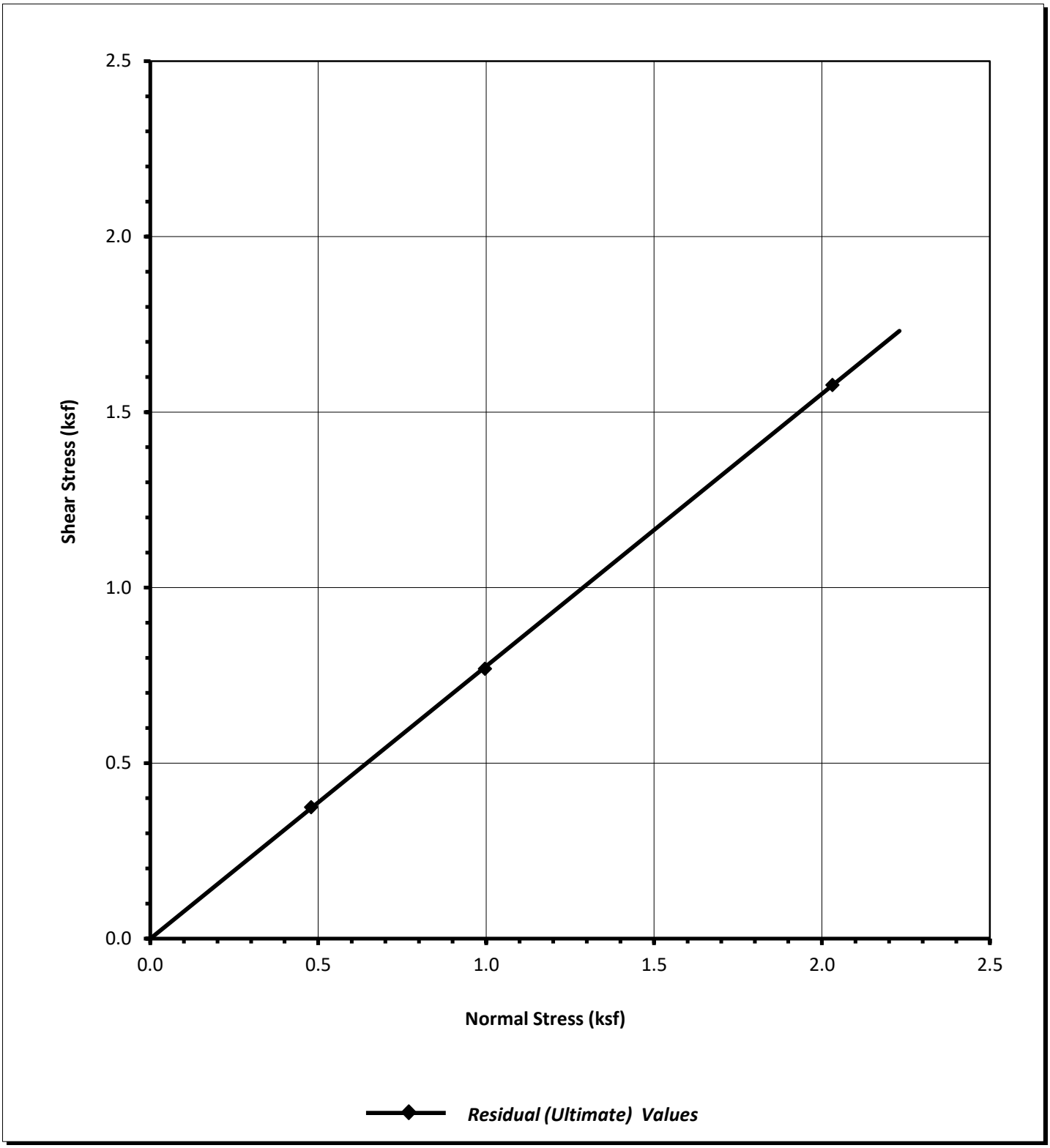
Laboratory Tests – continued

- Expansion Test

An expansion test was performed on a soil sample to determine the swell characteristics. The expansion test was conducted in accordance with ASTM D4829-19 Test Method. The expansion sample was remolded to approximately 90 percent relative compaction at near optimum moisture content subjected to 144 pounds per square foot surcharge load and were saturated.

Sample ID	Molded Dry Density (pcf)	Molded Moisture Content (%)	% Saturation	Expansion Index (EI)	Expansion Classification
B-1 @ 0.5'-2'	96.6	16.9	63.5	42	Low

Plates D-1 thru D-3 Direct Shear Test Results



Sample	*P-1 @ 2"*	Dry Density (pcf)	*87.8*
Description	*Light grayish brown Siltstone*	Moisture Content (%)	*10.3*
ϕ-angle (degree)	*37.5*	*Ultimate*	
Cohesion (ksf)	*0.000*	*(Residual)*	

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Consulting Geotechnical Engineers

Associated Soils Engineering, Inc.

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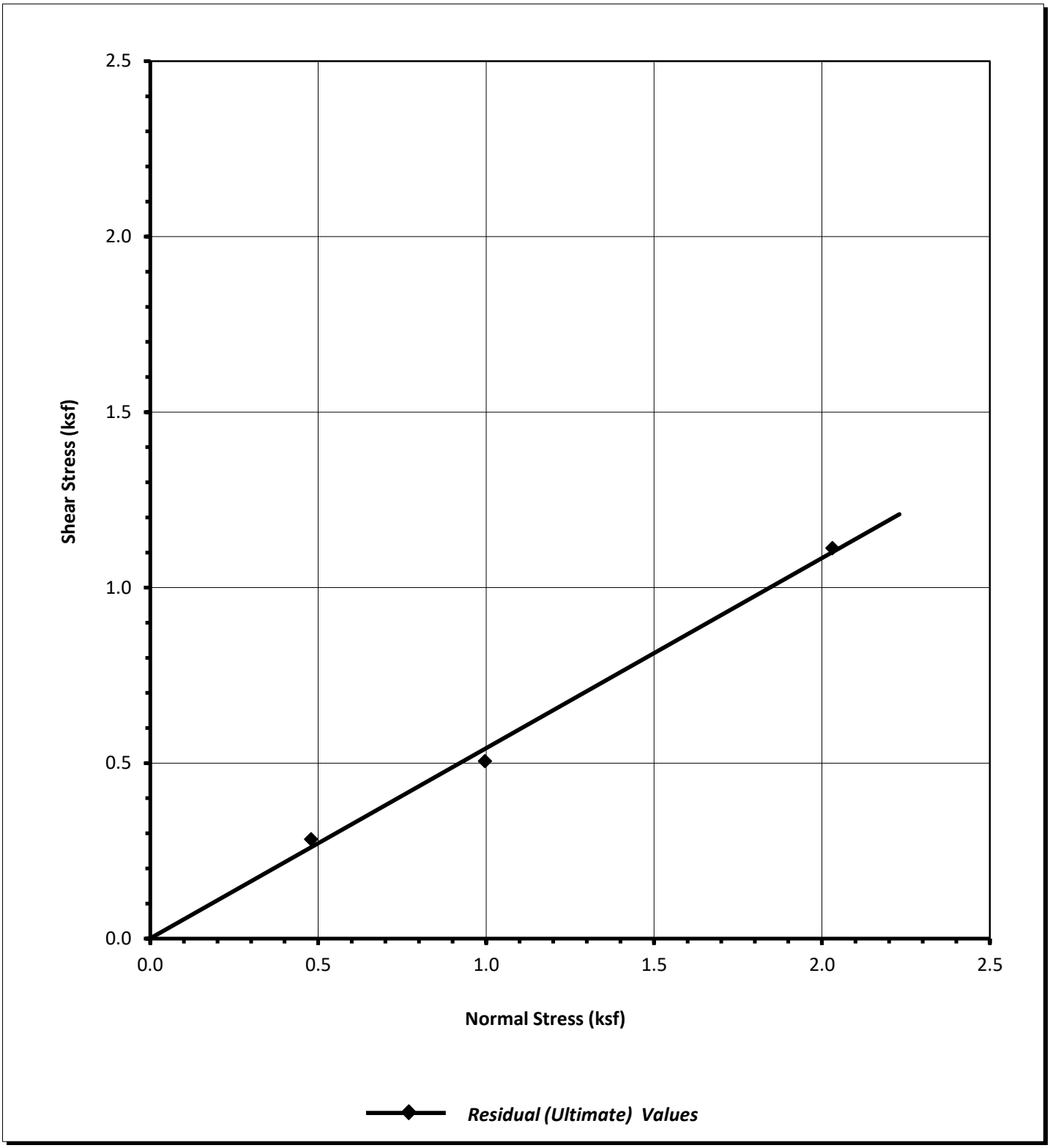
Project:	**Proposed Pump Station** **24141 Moulton Parkway, Laguna Woods, CA**		
Plate **D-1**	**Direct Shear Test Result** **(ASTM D 3080-11 Test Method)**		
Project No.:	**7046.22**	Date:	**March, 2022**



Sample	*P-2 @ 2"*	Dry Density (pcf)	*80.3*
Description	*Light Gray Siltstone*	Moisture Content (%)	*17.1*
ϕ-angle (degree)	*28.0*	Ultimate	
Cohesion (ksf)	*0.000*	(Residual)	

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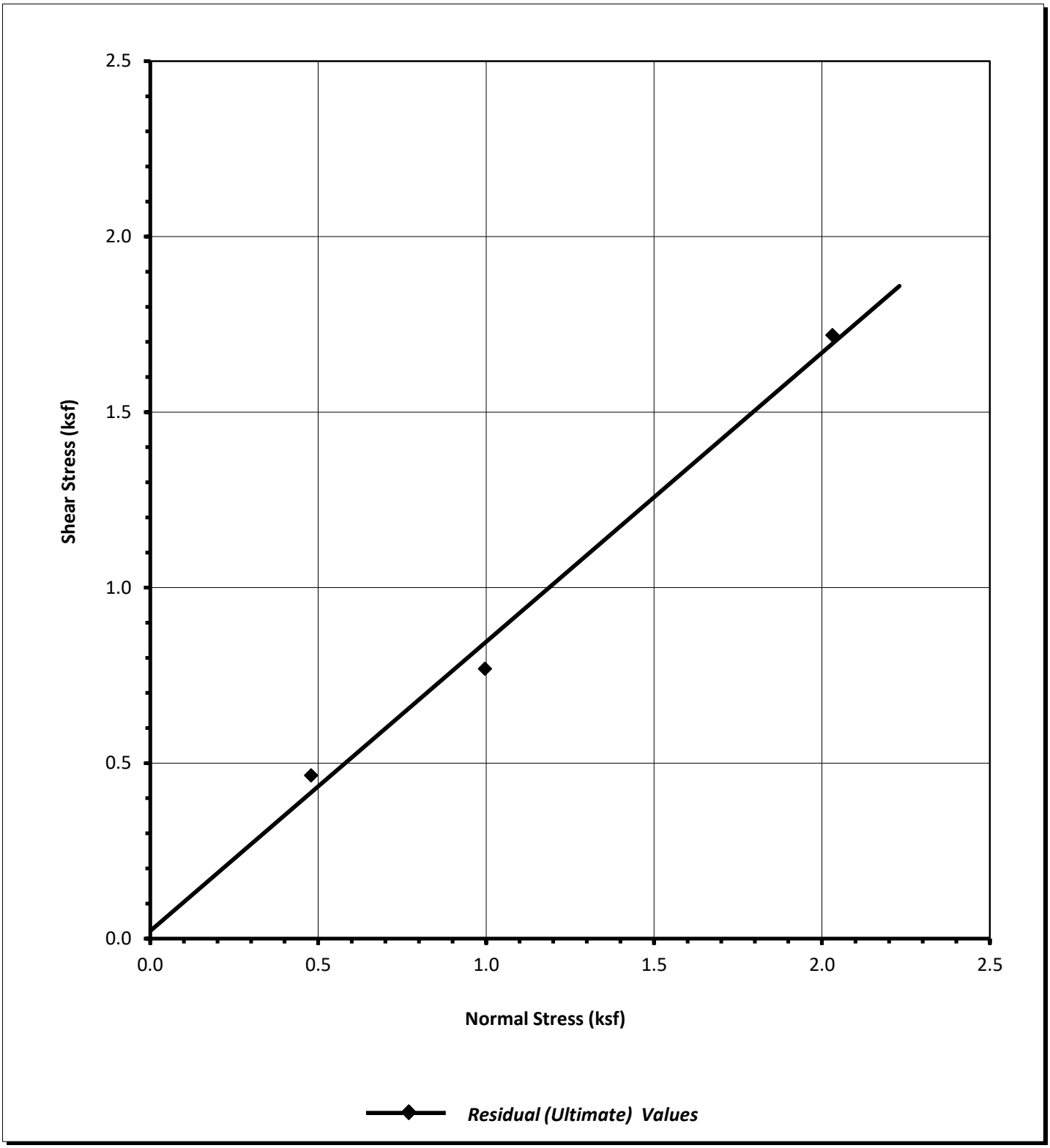
Project:	**Proposed Pump Station** **24141 Moulton Parkway, Laguna Woods, CA**		
Plate **D-2**	**Direct Shear Test Result** **(ASTM D 3080-11 Test Method)**		
Project No.:	**7046.22**	Date:	**March, 2022**



Sample	*P-2 @ 2.5'*	Dry Density (pcf)	*102.7*
Description	*Pale Yellow Siltstone*	Moisture Content (%)	*10.1*
ϕ-angle (degree)	*39.0*	Ultimate	
Cohesion (ksf)	*0.020*	(Residual)	

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Associated Soils Engineering, Inc.

2860 Walnut Avenue
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Project:	**Proposed Pump Station** **24141 Moulton Parkway, Laguna Woods, CA**		
Plate **D-3**	**Direct Shear Test Result** **(ASTM D 3080-11 Test Method)**		
Project No.:	**7046.22**	Date:	**March, 2022**

APPENDIX B - SITE FAULTING/SEISMICITY DATA

Plates I-1 and I-2	EQFAULT – Deterministic Estimation of Peak Acceleration from Digitized Faults

```
**********************
*                    *
*    E Q F A U L T   *
*                    *
*    Version 3.00    *
*                    *
**********************

DETERMINISTIC ESTIMATION OF
PEAK ACCELERATION FROM DIGITIZED FAULTS


JOB NUMBER: 7046.22
                                                    DATE: 03-31-2022

JOB NAME: Proposed Pump Station
          24141 Moulton Parkway, Laguna Woods, CA
CALCULATION NAME: Deterministic,Pump Station

FAULT-DATA-FILE NAME: C:\Program Files\EQFAULT1\Cgsflte.dat

SITE COORDINATES:
   SITE LATITUDE:  33.6107
   SITE LONGITUDE:  117.7287

SEARCH RADIUS:   62  mi

ATTENUATION RELATION:  20) Sadigh et al. (1997) Horiz. - Soil
   UNCERTAINTY (M=Median, S=Sigma): M       Number of Sigmas:  0.0
   DISTANCE MEASURE:  clodis
   SCOND:   0
   Basement Depth:  5.00 km     Campbell SSR:        Campbell SHR:
   COMPUTE PEAK HORIZONTAL ACCELERATION

FAULT-DATA FILE USED:  C:\Program Files\EQFAULT1\Cgsflte.dat

MINIMUM DEPTH VALUE (km):  0.0
```

DETERMINISTIC SITE PARAMETERS

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE mi	APPROXIMATE DISTANCE (km)	ESTIMATED MAX. EARTHQUAKE EVENT MAXIMUM EARTHQUAKE MAG.(Mw)	ESTIMATED MAX. EARTHQUAKE EVENT PEAK SITE ACCEL. g	ESTIMATED MAX. EARTHQUAKE EVENT EST. SITE INTENSITY MOD.MERC.
SAN JOAQUIN HILLS	1.7	2.8	6.6	0.592	X
NEWPORT-INGLEWOOD (Offshore)	8.0	12.9	7.1	0.288	IX
NEWPORT-INGLEWOOD (L.A.Basin)	11.3	18.2	7.1	0.230	IX
ELSINORE (GLEN IVY)	16.1	25.9	6.8	0.148	VIII
CHINO-CENTRAL AVE. (Elsinore)	16.2	26.1	6.7	0.179	VIII
WHITTIER	17.6	28.4	6.8	0.136	VIII
PALOS VERDES	21.9	35.2	7.3	0.147	VIII
ELSINORE (TEMECULA)	22.0	35.4	6.8	0.108	VII
PUENTE HILLS BLIND THRUST	23.5	37.8	7.1	0.156	VIII
CORONADO BANK	26.3	42.3	7.6	0.146	VIII
SAN JOSE	30.8	49.6	6.4	0.070	VI
SIERRA MADRE	35.4	57.0	7.2	0.106	VII
CUCAMONGA	35.5	57.2	6.9	0.086	VII
ROSE CANYON	38.0	61.2	7.2	0.076	VII
UPPER ELYSIAN PARK BLIND THRUST	38.2	61.5	6.4	0.053	VI
SAN JACINTO-SAN BERNARDINO	39.8	64.1	6.7	0.050	VI
SAN JACINTO-SAN JACINTO VALLEY	40.0	64.4	6.9	0.058	VI
RAYMOND	41.0	66.0	6.5	0.053	VI
CLAMSHELL-SAWPIT	42.1	67.8	6.5	0.051	VI
VERDUGO	43.5	70.0	6.9	0.067	VI
ELSINORE (JULIAN)	44.2	71.2	7.1	0.059	VI
HOLLYWOOD	45.5	73.2	6.4	0.042	VI
SAN ANDREAS - SB-Coach. M-2b	46.9	75.4	7.7	0.084	VII
SAN ANDREAS - SB-Coach. M-1b-2	46.9	75.4	7.7	0.084	VII
SAN ANDREAS - Whole M-1a	46.9	75.4	8.0	0.103	VII
SAN ANDREAS - San Bernardino M-1	46.9	75.4	7.5	0.073	VII
SAN JACINTO-ANZA	47.5	76.5	7.2	0.058	VI
SAN ANDREAS - 1857 Rupture M-2a	48.7	78.4	7.8	0.086	VII
SAN ANDREAS - Mojave M-1c-3	48.7	78.4	7.4	0.065	VI
SAN ANDREAS - Cho-Moj M-1b-1	48.7	78.4	7.8	0.086	VII
SANTA MONICA	50.5	81.2	6.6	0.043	VI
CLEGHORN	50.6	81.4	6.5	0.031	V
NORTH FRONTAL FAULT ZONE (West)	53.5	86.1	7.2	0.064	VI
MALIBU COAST	54.6	87.9	6.7	0.042	VI
SIERRA MADRE (San Fernando)	56.4	90.8	6.7	0.040	V
SAN GABRIEL	58.3	93.8	7.2	0.045	VI
NORTHRIDGE (E. Oak Ridge)	58.7	94.4	7.0	0.048	VI
ANACAPA-DUME	61.3	98.6	7.5	0.067	VI

-END OF SEARCH- 38 FAULTS FOUND WITHIN THE SPECIFIED SEARCH RADIUS.

THE SAN JOAQUIN HILLS FAULT IS CLOSEST TO THE SITE.
IT IS ABOUT 1.7 MILES (2.8 km) AWAY.

LARGEST MAXIMUM-EARTHQUAKE SITE ACCELERATION: 0.5917 g

APPENDIX C - LIST OF REFERENCES

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22. U.S. Geologic Survey, 2006, Geologic Map of the San Bernardino and Santa Ana 30' x 60' Quadrangles, Open File Report 2006-1217.

Appendix E
Noise

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: ETWD JTM PUMP STATION — PROJECT #: 13910
SITE ID:
SITE ADDRESS:
OBSERVER(S): PETE VIVAR
START DATE: 1/13/22 — END DATE: 1/13/22
START TIME: — END TIME:

METEOROLOGICAL CONDITIONS
TEMP: 60 F — HUMIDITY: 41 % R.H. — WIND: (CALM) LIGHT MODERATE
WINDSPD: 1 MPH — DIR. N NE S SE S SW W NW — VARIABLE STEADY GUSTY
SKY: SUNNY CLEAR (OVRCAST) PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT: PICCOLO SLM-3 — TYPE 1 2 — SERIAL #: 130927046
CALIBRATOR: REED TC8090 — SERIAL #: —
CALIBRATION CHECK — PRE-TEST: ____ dBA SPL — POST-TEST: ____ dBA SPL — WINDSCRN: YES

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
(ST3) 65-80	9:58	10:13							

COMMENTS: READING TAKE IN PARKING LOT AT NE CORNER OF SCO'S OPTICO PENCIL BUILDING; PRIMARY NOISE SOURCE IS CARS DRIVING THROUGH PARKING LOT; (24331 EL TORO)

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT — DIST. TO RDWY C/L OR EOP: METER APX 25' FROM NE CORNER OF BUILDING

TRAFFIC COUNT DURATION: — MIN — SPEED

COUNT 1 (OR RDWY 1)	DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
	AUTOS				
	MED TRKS				
	HVY TRKS				
	BUSES				
	MOTRCLS				

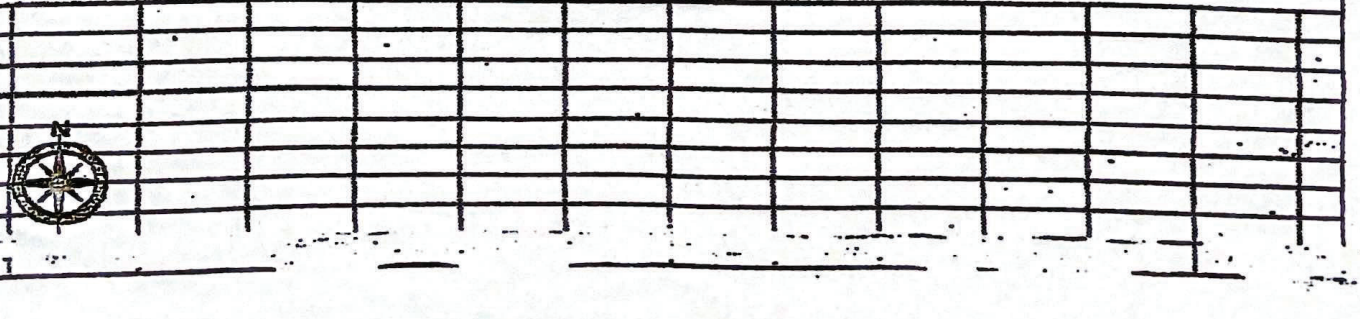
IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE: —

COUNT 2 (OR RDWY 2)	MIN		SPEED	
	NB/EB	SB/WB	NB/EB	SB/WB

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: SOME AUDIBLE NOISE FROM DISTANT ROADWAYS; SOME CONVERSATION FROM PEOPLE WALKING THROUGH PARKING LOT; OCCASIONAL DISTANT EMERGENCY VEHICLE SIREN (FAINT);

DESCRIPTION / SKETCH
TERRAIN: (HARD) SOFT MIXED FLAT OTHER:
PHOTOS: 3308; 3309; 3310; 3311
OTHER COMMENTS / SKETCH



1

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: ETWD JTM PUMP STATION — PROJECT #: 13910
SITE ID:
SITE ADDRESS: — OBSERVER(S): PETE VITAR
START DATE: 1/13/22 — END DATE: 1/13/22
START TIME: — END TIME:

METEOROLOGICAL CONDITIONS
TEMP: 60 F — HUMIDITY: 41 % R.H. — WIND: (CALM) LIGHT MODERATE
WINDSPD: 1 MPH — DIR. N NE S SE S SW W NW — VARIABLE STEADY GUSTY
SKY: SUNNY CLEAR (OVRCAST) PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT: PICCOLO SCM-P3 — TYPE 1 2 — SERIAL #: 130927046
CALIBRATOR: QUEST QC-10 — SERIAL #: —
CALIBRATION CHECK — PRE-TEST: ____ dBA SPL — POST-TEST: ____ dBA SPL — WINDSCRN: YES

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
(ST2) 81-96	10:19	10:34							

COMMENTS: READING TAKEN IN PARKING LOT AT SOUTHEAST END OF AREA S HOTEL (24341 EL TORO RD); PRIMARY NOISE SOURCE IS CARS DRIVING THROUGH PARKING LOT.

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT — DIST. TO RDWY C/L OR EOP: METER ADX 20' FROM EAST END OF HOTEL BLDG.
TRAFFIC COUNT DURATION: — MIN — SPEED ____ MIN

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE —

COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING (DIST. TRAFFIC (LIST RDWYS BELOW)) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: SOME NOISE FROM DISTANT RUNWAYS; BIRDS

DESCRIPTION / SKETCH
TERRAIN: (HARD) SOFT MIXED FLAT OTHER:
PHOTOS: 3313; 3314; 3315; 3316
OTHER COMMENTS / SKETCH

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: EWD JTM PUMP STATION — PROJECT #: 13910
SITE ID:
SITE ADDRESS: — OBSERVER(S): PETE VITAIC
START DATE: 1/13/22 — END DATE: 1/13/22
START TIME: — END TIME:

METEOROLOGICAL CONDITIONS

TEMP: 61 F — HUMIDITY: 36 % R.H. — WIND: (CALM) LIGHT MODERATE
WINDSPD: 2 MPH — DIR. N NE E SE S SW W NW — VARIABLE STEADY GUSTY
SKY: SUNNY CLEAR (OVRCAST) PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT: PICCOLO SLM-P3 — TYPE 1 2 — SERIAL #: 130927046
CALIBRATOR: REED R8090 — SERIAL #: –
CALIBRATION CHECK — PRE-TEST: ____ dBA SPL — POST-TEST: ____ dBA SPL — WINDSCRN: YES

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

	REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
(ST1)	97-112	10:36	10:51							

COMMENTS:
READING TAKEN NEAR NORTHEAST CORNER OF ATSIS HOUSE (24341 EL TORO RD); PRIMARY NOISE SOURCES ARE TRAFFIC IN FOREGROUND/DISTANT TRAFFIC ON MOULTON PKWY TO THE NORTH/LOW HUM FROM HOTEL LAUNDRY AT NE CORNER OF BLDG.

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT — DIST. TO RDWY C/L OR EOP: MEDIAN APX 45' FROM NORTH END OF HOTEL BLDG
TRAFFIC COUNT DURATION: — MIN

COUNT 1 (OR RDWY 1)	DIRECTION	NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB
	AUTOS				
	MED TRKS				
	HVY TRKS				
	BUSES				
	MOTRCLS				

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ✓

COUNT 2 (OR RDWY 2)	MIN	NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: CONSISTANT NOISE FROM TRAFFIC ON MOULTON PKWY TO THE NORTH; CONSISTANT LOW HUM FROM HOTEL LAUNDRY AT NE CORNER OF BLDG.

DESCRIPTION / SKETCH

TERRAIN: (HARD) SOFT MIXED FLAT OTHER:
PHOTOS: 3318; 3319; 3320; 3321
OTHER COMMENTS / SKETCH

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase, per FTA = 85

allowable hours over which L_{eq} is to be averaged = 8

Construction Phase	FHWA RCNM Equipment Type	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Site Demolition	Concrete Saw	1	20	90		200	78.0	8	480	71
	Front End Loader	1	40	79		200	67.0	8	480	63
	Dozer	1	40	82		200	70.0	8	480	66
							Total for Site Demolition Phase:			**72.7**
Site Preparation	Dozer	1	40	82		200	70.0	8	480	66
	Backhoe	1	40	78		200	66.0	8	480	62
							Total for Site Preparation Phase:			**67.4**
Grading	Excavator	1	40	81		200	69.0	8	480	65
	Grader	1	40	85		200	73.0	8	480	69
	Front End Loader	1	40	79		200	67.0	8	480	63
							Total for Grading Phase:			**71.2**
Paving	Paver	1	50	77		200	65.0	8	480	62
	Roller	1	20	80		200	68.0	8	480	61
	All Other Equipment > 5 HP	1	50	85		200	73.0	8	480	70
							Total for Paving Phase:			**71.0**
Pump Station Construction	Crane	1	16	81		200	69.0	8	480	61
	Man Lift	1	20	75		200	63.0	8	480	56
	Generator	1	50	72		200	60.0	8	480	57
	Welder / Torch	1	40	73		200	61.0	9	540	57
	Backhoe	1	40	78		200	66.0	8	480	62
							Total for Pump Station Construction Phase:			**66.3**

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase, per FTA = 85

allowable hours over which L_{eq} is to be averaged = 8

Construction Phase	FHWA RCNM Equipment Type	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Site Demolition	Concrete Saw	2	20	90		225	76.9	8	480	73
	Front End Loader	1	40	79		225	65.9	8	480	62
	Dozer	1	40	82		225	68.9	8	480	65
							Total for Site Demolition Phase:			**73.9**
Site Preparation	Dozer	2	40	82		225	68.9	8	480	68
	Backhoe	2	40	78		225	64.9	8	480	64
							Total for Site Preparation Phase:			**69.4**
Grading	Excavator	2	40	81		225	67.9	8	480	67
	Grader	2	40	85		225	71.9	8	480	71
	Front End Loader	3	40	79		225	65.9	8	480	67
							Total for Grading Phase:			**73.5**
Paving	Paver	2	50	77		225	63.9	8	480	64
	Roller	2	20	80		225	66.9	8	480	63
	All Other Equipment > 5 HP	2	50	85		225	71.9	8	480	72
							Total for Paving Phase:			**73.0**
Pump Station Construction	Crane	1	16	81		225	67.9	8	480	60
	Man Lift	3	20	75		225	61.9	8	480	60
	Generator	1	50	72		225	58.9	8	480	56
	Welder / Torch	3	40	73		225	59.9	9	540	61
	Backhoe	3	40	78		225	64.9	8	480	66
							Total for Pump Station Construction Phase:			**68.7**

Table 1. CA/T equipment noise emissions and acoustical usage factors database.

CA/T Noise Emission Reference Levels and Usage Factors					
filename: EQUIPLST.xls					
revised: 7/26/05		Acoustical	Spec 721.560	Actual Measured	No. of Actual
	Impact	Use Factor	Lmax @ 50ft	Lmax @ 50ft	Data Samples
Equipment Description	Device ?	(%)	(dBA, slow)	(dBA, slow)	(Count)
				(samples averaged)	
All Other Equipment > 5 HP	No	50	85	-- N/A --	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	-- N/A --	0
Blasting	Yes	-- N/A --	94	-- N/A --	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	-- N/A --	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	-- N/A --	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydr. Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	-- N/A --	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact Hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarafier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	40	55	75	1
Pneumatic Tools	No	50	85	85	90
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/chipping gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (Single Nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	-- N/A --	0
Tractor	No	40	84	-- N/A --	0
Vacuum Excavator (Vac-truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder / Torch	No	40	73	74	5