DRAFT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

FOR THE

SAN GABRIEL VALLEY WATER COMPANY
PLANT NO. 7 PROJECT

Prepared for:

Río Hondo Community College District
3600 Workman Mill Road
Whittier, California 90601

Prepared by:

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LIST OF ABBREVIATIONS AND ACROYNMS

AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ACI	American Concrete Institute
amsl	above mean sea level
APE	Area of Potential Effect
AQMP	Air Quality Management Plan
AWWA	American Water Works Association
BACMs	Best Available Control Measures
BMPs	Best Management Practices
BRA	Biological Resources Assessment
BUOW	Burrowing Owl
CAAA	Clean Air Act Amendment
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CBC	California Building Code
CCAP	Community Climate Action Plan
CCAR	California Climate Action Registry (now called Climate Action Reserve)
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CGS	California Geologic Survey
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DOI	Department of Interior
DSA	Division of the State Architect
EO	Executive Orders
ESA	Endangered Species Act
FEMA	Federal Emergency Management Act
FGC	Fish & Game Code
FTA	Federal Transit Association
GCC	Global Climate Change
GHG	Greenhouse Gas
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HCP	Habitat Conservation Plan
LRA	Local Responsible Area
LSA	Lake or Streambed Alteration Agreement
LST	Localized Significance Thresholds
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act

LIST OF ABBREVIATIONS AND ACROYNMS (*Continued*)

MG	Million Gallons
MM	Mitigation Measure
MTP	Monitoring and Treatment Plan
NAAQS	National Ambient Air Quality Standards
NBP	Nesting Bird Plan
NCCP	Natural Community Conservation Plan
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PM	particulate matter
PPV	Peak Particle Velocity
RMS	Root Mean Square
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
SB	State Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SGMA	Sustainable Groundwater Management Act
SGVWC	San Gabriel Valley Water Company
SIP	State Implementation Plan
SMU	Site Mitigation Units
SOx	Sulfur Oxides
SRA	State Responsibility Area
SWPPP	Storm Water Pollution Prevention Plan
TRC	Tribal Cultural Resources
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	vibration-velocity decibel
VMT	Vehicle Miles Traveled
WCSD	Whittier City School District
WoUS	Waters of the United States
WUHSD	Whittier Union High School District
WQMP	Water Quality Management Plan

ENVIRONMENTAL CHECKLIST

INTRODUCTION

1. Project Title: San Gabriel Valley Water Company
   Plant No. 7 – 0.6-MG Water Storage Reservoir (South)

2. Lead Agency Name: Río Hondo Community College District
   Address: 3600 Workman Mill Road, Whittier, CA 90601

3. Contact Person: Russell Castañeda-Calleros, Director of Government and Community Relations
   Phone Number: (562) 463-7268
   Email: rcastaneda-calleros@riohondo.edu

4. Project Location: The proposed Project is located next to an existing water storage site and adjacent to an access road—Observatory Road—on the easterly boundaries of Río Hondo Community College District (Río Hondo College), the primary address for which is 3600 Workman Mill Road, Whittier, CA 90601 ("Site"). The nearest cross street is South Drive and Circle Drive located in unincorporated North Whittier. The proposed Project is located within the USGS Topo 7.5-minute map for El Monte, CA, and is located in Section 3, Township 2 South and Range 11 West. The approximate GPS coordinates of the Site are 34.019242, -118.027665. Refer to Figures 1 and 2 for the regional and site location maps.

5. Project Sponsor Name: San Gabriel Valley Water Company
   Address: 11142 Garvey Avenue, El Monte, CA 91733

6. General Plan Designation: Public and Semi-Public (P)

7. Zoning: Heavy Agriculture (A-2-5)

8. **PROJECT DESCRIPTION**

Introduction

San Gabriel Valley Water Company (SGVWC) serves several communities throughout southern California, and is based in El Monte in the San Gabriel Valley. San Gabriel provides water service to a population of over 481,000 within the Los Angeles County and Fontana Water Division service areas.

Project Description

SGVWC requires the construction of a second water reservoir, which will be 60 feet in diameter and 40 feet high and .60 million gallons (MG), on the Site in order to enable SGVWC to continue to provide adequate services to the Río Hondo College campus ("Project"). The second reservoir will also allow for the existing reservoir to be taken out of service when required for routine maintenance.

The existing Plant No. 7 facility is located within an approximately 0.3-acre site, and currently includes one 0.75 MG welded steel water storage reservoir (66 feet in diameter by 40 feet high) and supporting facilities as summarized below. The existing Plant No. 7 facility site is currently only accessible through a gated access driveway bounded by chain link fencing. Ground cover consists of concrete/asphalt pavement and native vegetation including trees.

The existing Plant No. 7 facility site presently contains the following facilities:

Physical Components

a. One 0.75 MG welded steel storage reservoir (66 feet in diameter by 40 feet high),
b. Piping,
c. Pavement, and
d. Electronic control equipment.

Operational Components

1. The existing control system telemetry is operational and in good condition.
2. The existing water storage reservoir is operational and in fair condition.

SGVWC proposes to install the new reservoir on the opposite side of the access road – Observatory Road – from the existing reservoir location. SGVWC considered other locations adjacent to the existing reservoir (shown below) as part of their planning process, but ultimately chose a site location south of the existing reservoir due to the minimal limits of construction and other favorable factors that would result from developing the reservoir at this site location. Exhibit 1, below shows the proposed Site.

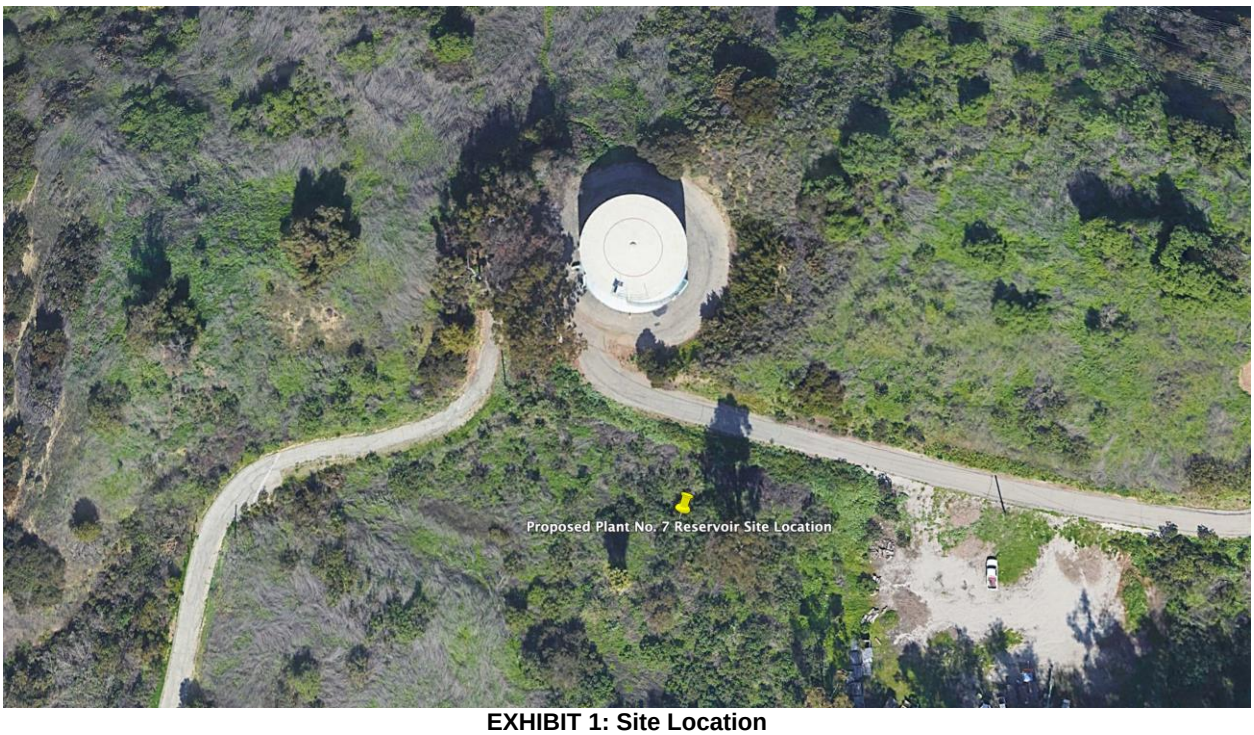


EXHIBIT 1: Site Location

The development of a new reservoir at this Site will ultimately result in the construction of a new 0.60 MG water storage reservoir, which will be 60 feet in diameter and 40 feet high. This Site is about 9,745 square feet in size, or about 0.22 acre. Development will require grading for the reservoir foundation, related piping, pavement, light pole foundations, wrought iron fencing, a catch basin, and landscaping.

These activities are discussed in detail below and are depicted in the Site plan provided as Figure 3.

The Site that has been selected for the proposed reservoir development was chosen due to the fact that:

- The reservoir will be constructed on a cut slope and result in balanced earthwork, resulting in minimal construction traffic related to earthwork;
- Following construction, the slope will be restored back to its natural state;
- The reservoir does not require a retaining wall;
- The reservoir at this location will not impact the existing power pole;
- The existing access road can remain in place during and following construction; and,
- Existing utilities can remain in service during and following construction.

Below outlines the Construction Scenario for development of the proposed reservoir. The limits of construction and other construction related work is depicted on Figure 4.

Grading: Development of Plant No. 7 will require grading to prepare a pad for the construction of the new reservoir. Grading includes any potential over-excavation, import and/or export of soil and compaction of soil beneath the new reservoir foundation for the proposed reservoir. The reservoir will be constructed on a cut slope and result in balanced earthwork. Following construction, the slope will be restored to its natural state. The Site will also be precisely graded to direct storm water runoff away from both the existing and proposed reservoirs and into efficient drainage systems.

Construct 0.60 MG Reservoir and Related Piping: Development of Plant No. 7 includes the construction of a second storage reservoir supported by a concrete pile foundation. The new reservoir will be a ground-based welded steel storage reservoir and will operate in conjunction with the existing welded steel storage reservoir. The proposed reservoir will be constructed in order to enable SGVWC to continue to provide adequate services to the Río Hondo College campus. The second reservoir will also allow for the existing reservoir to be taken out of service when required for routine maintenance. The proposed reservoir will be 60 feet in diameter by 40 feet high with a usable capacity of 0.60 MG.

The new reservoir will be designed in accordance with the California Building Code (CBC), the Occupational Safety and Health Administration (OSHA), American Concrete Institute (ACI), Division of the State Architect (DSA) requirements, and AWWA's design standards. AWWA's design standards require that reservoirs be operated at fill levels below their maximum physical height in order to prevent roof damage which may be caused by a "sloshing wave" during a seismic event. Although the physical height of the reservoir is 40 feet, the water level will be maintained at approximately 32 feet to comply with AWWA's freeboard requirements.

Construction timing: Design and construction of the Project is anticipated to be completed in approximately 12 months.

Welded Steel Reservoir: The Site will be excavated to create a flat area about 20 feet wider than the tank diameter for construction of the reservoir foundation and the reservoir itself. The 20-foot width around the tank wall is needed for maintenance access and installation of reservoir appurtenances. A drainage system will be constructed to direct storm water away from reservoir and into the existing public storm drainage system.

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

The surrounding land uses occur in the vicinity of the Site include:

- To the north of the reservoir Site, the zoning is Heavy Agriculture (A-2-5), and the General Plan Designation is Public and Semi-Public (P);
- To the west of the reservoir Site, the zoning is Heavy Agriculture (A-2-5), and the General Plan Designation is Public and Semi-Public (P);
- To the south of the reservoir Site, the zoning is Heavy Agriculture (A-2-5), and the General Plan Designation is Public and Semi-Public (P); and,
- To the east of the reservoir Site, the zoning is Heavy Agriculture (A-2-5), and the General Plan Designation is Public and Semi-Public (P). Further east of the reservoir Site is open space (O-S) land use.

Major land uses surrounding the Site include: the Puente Hills Landfill, located to the east and north of the Site; Río Hondo College to the west of the Site; and, the Rose Hills Memorial Park and Mortuary facilities to the south. Exhibit 2, below shows the proposed reservoir Site location in relation to the Rose Hills Memorial Park and Mortuary, about 150 feet south of the Site.



EXHIBIT 2: Site Location in Relation to the Rose Hills Memorial Park and Mortuary

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

Before SGVWC connects the new reservoir with the distribution system that provides water service to Río Hondo College, an amendment to SGVWC's domestic water supply permit will be required from the State Division of Drinking Water. No other permits are known to be required. Because State responsible or trustee agencies have been identified for this Project, SGVWC will implement a 30-day review period for this draft Initial Study/Mitigated Negative Declaration (IS/MND).

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, has consultation begun?

No California Native American tribe has submitted a letter to the Río Hondo College requesting consultation pursuant to AB 52 as of July 2022. However, in an effort to ensure that Río Hondo College is communicative with tribes in the area, Río Hondo College has contacted the Gabrieleño/Tongva San Gabriel Band of Mission Indians and the Gabrieleño Band of Mission Indians – Kizh Nation. Río Hondo College has had an informal conversation with the Gabrieleño/Tongva San Gabriel Band of Mission Indians regarding the Project and will send this IS/MND to the Gabrieleño/Tongva San Gabriel Band of Mission Indians and to the Gabrieleño Band of Mission Indians – Kizh Nation, who may be culturally affiliated with the proposed Project area. Furthermore, out of an abundance of caution, Río Hondo College will reach out—during the public review process—to the Native American tribes listed above to solicit their input.

> Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

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

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation, the following finding is made:

☐	The proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☒	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.
☐	The proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	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.
☐	Although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Tom Dodson & Associates
Prepared by

8/26/22
Date

Lead Agency (signature)

9/12/2022
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 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.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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 or 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?	☐	☐	☐	☒

SUBSTANTIATION

a. *Less Than Significant Impact* – Adverse impacts to scenic vistas can occur in one of two ways. First, an area itself may contain existing scenic vistas that would be altered by new development. The proposed Site currently is adjacent to an existing reservoir; construction of a second reservoir will not impact any scenic vistas within the Site itself. The Site is located in unincorporated North Whittier, within the La Puente Hills overlooking Río Hondo College (to the west of the reservoir Site), and is located to the south and west of the Puente Hills Landfill; the Site itself doesn't contain any important scenic vistas which could be impacted by implementing the proposed new 0.60 MG, 60' (diameter) x 40' (height) reservoir adjacent to the existing 66' (diameter) x 40' (height) reservoir. A scenic vista impact can also occur when a scenic vista can be viewed from the project area or immediate vicinity and a proposed development may interfere with the view to a scenic vista. The proposed reservoir will be located adjacent to the existing reservoir, and will be constructed at the same height as the existing reservoir. Views to the north, west, and south consist of the hills surrounding the existing reservoir, including the Rose Hills Memorial Park and Mortuary facilities. Upon a review of views from nearby roadways, the existing reservoir is not highly visible from many vantage points within the areas that have access to this viewshed. Therefore, given that the second reservoir at this location would be located adjacent to and at the same elevation as the existing reservoir, the addition of a second reservoir at this location is not anticipated to substantially impact scenic vistas to residents or visitors within the project area. Construction of a second reservoir will be similar to that which exists in the vista of the foothills at present. Therefore, implementation of the proposed new reservoir is not expected to cause any substantial effects on any important scenic vistas. This potential impact is considered a less than significant adverse aesthetic impact. No mitigation is required.

b. *Less Than Significant With Mitigated Incorporated* – The proposed Project Site is adjacent to an existing reservoir, and therefore the construction of a new reservoir at this location is consistent with that which would be expected at the Site. There are several trees to the southwest of the existing reservoir that would require removal in order to develop the proposed new reservoir. These trees are not Oak Trees, and Los Angeles County only protects oak trees, recognizing oak trees as "significant historical, aesthetic and ecological resources, and as one of the most picturesque trees in Los Angeles County" (County of Los Angeles – County Code, 22.56.2050). Given that the proposed Project would not require removal of protected trees requiring a permit for removal, removal of trees

at this Site would not result in a significant impact. However, mitigation is provided below to ensure that SGVWC provides replacement trees for all trees removed as part of the project site.

AES-1 Where the removal of trees is required to develop the reservoir, SGVWC shall replace all trees removed at a 1:1 ratio.

Rock outcroppings, historic buildings, or other scenic resources identified by the County General Plan do not occur on Site, especially given that the Site is adjacent to an existing reservoir and is therefore suitable for development of a second reservoir. Consequently, impacts to scenic resources on Site are considered less than significant with the implementation of mitigation measure (MM) **AES-1**.

c. *Less Than Significant Impact* – The proposed Project Site is located in a relatively urbanized area surrounded by the Río Hondo College to the west, the Rose Hills Memorial Park and Mortuary facilities to the south, and the Puente Hills Landfill to the northeast and east. The proposed Project Site is adjacent to an existing 0.75-MG water storage reservoir that will install an above ground reservoir at a the same elevation of the existing reservoir. The Site ranges in elevation and consists of trees and vegetation, as well as the existing access road that skirts the existing reservoir Site. The Site is located in an area that contains existing water facilities and the construction of the new reservoir would be visually consistent with the existing landscape at the Site. The existing reservoir is located at a the same elevation as the proposed reservoir, and as such, the height of the new reservoir would not create any greater visual footprint than that which presently exists. Furthermore, while the proposed Project is located within the heavy Agriculture zone classification, which allows for a maximum height limit of 35 feet—a height which the proposed reservoir will exceed by about 5 feet—the proposed Project is an infrastructure project, and such projects as the proposed Project are considered land use/zone independent, and therefore, the proposed development of a second reservoir and associated Site improvements would not have a significant potential to conflict with applicable zoning or other regulations governing scenic quality. Impacts under this issue are considered less than significant, and no mitigation is required.

d. *No Impact* – The existing reservoir utilizes lighting on an as-need basis. SGVWC may install lighting intended for security and to enable night-time operations and maintenance activities. The lights are installed with a switch, so they can be shut off. Existing sources of light in the project area include the Río Hondo College to the west and the Rose Hills Memorial Park and Mortuary facilities to the south. No residences or other sensitive uses are located in the vicinity of the existing reservoir site. The construction activities are limited to daylight hours unless an emergency occurs, and the amount of security lighting needed during construction will be limited. Therefore, given that the proposed Project would not create a new permanent source of light, the proposed Project is not anticipated to introduce a new source of light and glare into the project area over previous uses. No impacts are anticipated to occur under this issue and no mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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. of 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?	☐	☐	☐	☒

SUBSTANTIATION

a. *No Impact* – The Site is located in unincorporated North Whittier, within the La Puente Hills overlooking Río Hondo College (to the west of the reservoir Site), and is located to the south of the Puente Hills Landfill. The proposed Project Site is zoned for Heavy Agriculture; the purpose of this zone is to permit a comprehensive range of agricultural uses in areas particularly suited for agricultural activities. The proposed Project Site does not currently contain any agricultural uses, as it currently contains an existing SGVWC reservoir. Furthermore, the development of water related infrastructure is considered land use and zone independent. No agricultural activities exist within the Site; and there is no potential for impacts to any agricultural uses or values as a result of project implementation. According to the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, no prime farmland, unique farmland, or farmland of statewide importance exists within the vicinity of the proposed Project, as the land underlying the Site is classified as "other land" by the California Important Farmland Finder (Figure II-1). No adverse

impact to any agricultural resources would occur from implementing the proposed Project. No mitigation is required.

b. *No Impact* – There are no agricultural uses currently on the Site or on adjacent properties. The proposed Project Site is zoned for Heavy Agriculture; the purpose of this zone is to permit a comprehensive range of agricultural uses in areas particularly suited for agricultural activities. However, the underlying land use as designated by the County of Los Angeles General Plan is Public and Semi-Public (P), which is the appropriate land use for the existing and proposed use of this Site. Additionally, the Site does not currently contain any agricultural uses, as it currently contains an existing reservoir. Furthermore, the development of water related infrastructure is considered land use and zone independent. Therefore, given that no Williamson Act contracts are located at the Site, and that no agricultural uses are located within the Site at present, the development of a new reservoir at this Site would not conflict with agricultural zoning or Williamson Act contracts within the project area. No mitigation is required.

c. *No Impact* – Please refer to issues a) and b) above. The proposed Project Site is located in the foothills of the unincorporated North Whittier, within the La Puente Hills overlooking Río Hondo College. The area surrounding the Project is defined by the adjacent Río Hondo College and cemetery. The proposed Project Site is zoned for Heavy Agriculture and the underlying land use as designated by the County of Los Angeles General Plan is Public and Semi-Public (P). The proposed Project Site does not currently contain any forest land uses, as it currently contains an existing SGVWC reservoir. No potential exists for a conflict between the proposed Project and forest/timberland zoning. No mitigation is required.

d. *No Impact* – There are no forest lands within the project area, which is because the project area is urbanized. No potential for loss of forest land would occur if the proposed Project is implemented. No mitigation is required.

e. *No Impact* – The proposed Project Site and surrounding area does not contain forestry uses, and though the project is zoned for Heavy Agriculture (A-2-5) use, the Site does not contain any agricultural uses as it currently contains an existing reservoir. Furthermore, water related infrastructure is considered land use and zone independent; therefore, implementation of the proposed Project would not cause or result in the conversion of Farmland or forest land to alternative use. No adverse impact would occur. No mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

SUBSTANTIATION: The following information utilized in this section of this IS/MND was obtained from the following technical study: *Air Quality and GHG Impact Analyses, San Gabriel Valley Water Company Plant No. 7 Project, Los Angeles County, California"* dated March 15, 2021 prepared by Giroux & Associates. This technical study is provided as Appendix 1 to this document.

Background

Climate

The proposed Project Site's climate, as with all Southern California, is dominated by the strength and position of the semi-permanent high pressure pattern over the Pacific Ocean near Hawaii. It creates cool summers, mild winters, and infrequent rainfall. It drives the cool daytime sea breeze, and it maintains comfortable humidity levels and ample sunshine after the frequent morning clouds dissipate. Unfortunately, the same atmospheric processes that create the desirable living climate combine to restrict the ability of the atmosphere to disperse the air pollution generated by the large population attracted in part by the desirable climate. Portions of the Los Angeles Basin therefore experience some of the worst air quality in the nation for certain pollutants.

Temperatures in the City of Whittier vicinity average 63 degrees annually. Daily and seasonal oscillations of temperature are small because of the moderating effects of the nearby ocean. Summer afternoons reach 90 degrees on average, and winter mornings drop to 40 degrees. In contrast to the steady temperature regime, rainfall is highly variable. Measurable precipitation occurs mainly from early November to mid-April, but total amounts are generally small. The City of Whittier averages 15 inches of rain annually with January as the wettest month. Twenty-two days per year have measurable rain, with moderate to heavy rain (>0.50 inch in 24 hours) on seven days.

Winds in the Project vicinity display several characteristic regimes. During the day, especially in summer, winds are from the southwest in the morning and from the northwest in the afternoon. Daytime wind speeds are 6-8 miles per hour on average. At night, especially in winter, the land becomes cooler than the ocean, and an off-shore wind of 2-4 miles per hour develops. One other important wind regime occurs when high pressure occurs over the western United States that creates hot, dry and gusty Santa Ana winds from the north and northeast across the City of Whittier. The net effect of the wind pattern on air pollution is that any locally generated emissions will be carried seaward at night and toward western Riverside or San Bernardino Counties by day. Although there are still recurring violations of some clean air standards, the

magnitude and frequency of those violations have diminished dramatically in the last 20-30 years in the project area.

Air Quality Standards
Existing air quality is measured at established South Coast Air Quality Management District (SCAQMD) air quality monitoring stations. Monitored air quality is evaluated in the context of ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) currently in effect are shown in Table III-1. Because the State of California had established Ambient Air Quality Standards (AAQS) several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table III-1. Sources and health effects of various pollutants are shown in Table III-2.

Baseline Air Quality

Long-term air quality monitoring is carried out by the SCAQMD at various monitoring stations. There are no nearby stations that monitor the full spectrum of pollutants. Ozone, carbon monoxide, PM-2.5 and nitrogen oxides are monitored at the Pico Rivera facility, while 10-micron diameter particulate matter (PM-10) is measured at the Azusa station. Table 3 summarizes the last four years of monitoring data from a composite of these data resources. The following conclusions can be drawn from these data:

a. Photochemical smog (ozone) levels occasionally exceed standards. The 8-hour state ozone standard as well as the 1-hour state standard have been exceeded on less than two percent of all days in the past four years. The 8-hour federal standard has been exceeded on less than one percent of days for the same period. While ozone levels are still high, they are much lower than 10 to 20 years ago. Attainment of all clean air standards in the project vicinity is not likely to occur soon, but the severity and frequency of violations is expected to continue to slowly decline during the current decade

b. Measurements of carbon monoxide have shown very low baseline levels in comparison to the most stringent one- and eight-hour standards.

c. Respirable dust (PM-10) levels exceed the state standard on approximately 14 percent of measurement days in the last four years, but the less stringent federal PM-10 standard has not been violated once for the same period. Year to year fluctuations of overall maximum 24-hour PM-10 levels seem to follow no discernable trend.

d. A substantial fraction of PM-10 is comprised of ultra-small diameter particulates capable of being inhaled into deep lung tissue (PM-2.5). There have been only three violations of the maximum 24-hour concentration of all measurement days in the last four years. PM-2.5 can be an occasional air quality concern in the project area.

Although complete attainment of every clean air standard is not yet imminent, extrapolation of the steady improvement trend suggests that such attainment could occur within the reasonably near future.

Table III-1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Average Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O3)[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		–		
Fine Particulate Matter (PM2.5)[9]	24 Hour	–	–	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15.0 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	–	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	–	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–	–	
Nitrogen Dioxide (NO2)[10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	–	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	–	Ultraviolet Flourescense; Spectrophotometry (Paraosaniline Method)
	3 Hour	–		–	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[11]	–	
Lead 8[12,13]	30-Day Average	1.5 µg/m^3	Atomic Absorption	–	–	–
	Calendar Quarter	–		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Avg	–		0.15 µg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	**No Federal Standards**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Footnotes

1 California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter – PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year, with a 24-hour average concentration above 150 $\mu g/m^3$, is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4 Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

7 Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

8 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9 On December 14, 2012, the national PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primarily and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primarily and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10 To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11 On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12 The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13 The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 j.tg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14 In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Table III-2
HEALTH EFFECTS OF MAJOR CRITERIA POLLUTANTS

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

Table III-3
AIR QUALITY MONITORING SUMMARY
(Number of Days Standards were Exceeded and Maximum Levels During Such Violations 2016-2019)

Pollutant/Standard	2016	2017	2018	2019
Ozone				
1-Hour > 0.09 ppm (S)	9	7	3	5
8-Hour > 0.07 ppm (S)	6	9	5	7
8- Hour > 0.075 ppm (F)	2	4	2	3
Max. 1-Hour Conc. (ppm)	0.11	0.12	0.12	0.11
Max. 8-Hour Conc. (ppm)	0.08	0.09	0.08	0.09
Carbon Monoxide				
1-Hour > 20. ppm (S)	0	0	0	0
1-Hour > 9. ppm (S, F)	0	0	0	0
Max 8-Hour Conc. (ppm)	1.7	2.2	1.8	1.9
Nitrogen Dioxide				
1-Hour > 0.18 ppm (S)	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.06	0.07	0.08	0.06
Respirable Particulates (PM-10)				
24-Hour > 50 $\mu g/m^3$ (S)	12/60	6/55	10/60	4/61
24-Hour > 150 $\mu g/m^3$ (F)	0/60	0/55	0/60	0/61
Max. 24-Hr. Conc. ($\mu g/m^3$)	41.	83.	78.	82.
Fine Particulates (PM-2.5)				
24-Hour > 35 $\mu g/m^3$ (F)	2/120	1/119	0/133	0/119
Max. 24-Hr. Conc. ($\mu g/m^3$)	46.6	49.5	35.4	29.6

(S) = state standard, (F) = federal standard
Source: South Coast AQMD – Pico Rivera Air Monitoring Station for Ozone, CO, NOx and PM-2.5
Azusa Monitoring Station for PM-10; data: www.arb.ca.gov/adam/

Air Quality Planning

For a detailed discussion of the Air Quality Plans in place that are applicable to the Project and surrounding area, see Appendix 1, pages 10-12.

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards. The Southern California Air Basin (SCAB) could not meet the deadlines for ozone, nitrogen dioxide, carbon monoxide, or PM-10. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it several times as earlier attainment forecasts were shown to be overly optimistic.

Because projected attainment by 2021 required control technologies that did not exist yet, the SCAQMD requested a voluntary “bump-up” from a “severe non-attainment” area to an “extreme non-attainment” designation for ozone. The extreme designation was to allow a longer time period for these technologies to develop. If attainment cannot be demonstrated within the specified deadline without relying on “black-box” measures, EPA would have been required to impose sanctions on the region had the bump-up request not been approved. In April 2010, the EPA approved the change in the non-attainment designation from

"severe-17" to "extreme." This reclassification set a later attainment deadline (2024), but also required the air basin to adopt even more stringent emissions controls.

Table III-4
SOUTH COAST AIR BASIN EMISSIONS FORECASTS (Emissions in tons/day)

Pollutant	2015[a]	2020[b]	2025[b]	2030[b]
NOx	357	289	266	257
VOC	400	393	393	391
PM-10	161	165	170	172
PM-2.5	67	68	70	71

[a]2015 Base Year.; [b]With current emissions reduction programs and adopted growth forecasts.
Source: California Air Resources Board, 2013 Almanac of Air Quality

In other air quality attainment plan reviews, EPA had disapproved part of the SCAB PM-2.5 attainment plan included in the AQMP. EPA stated that the current attainment plan relied on PM-2.5 control regulations that had not yet been approved or implemented. It was expected that a number of rules that were pending approval would remove the identified deficiencies. If these issues were not resolved within the next several years, federal funding sanctions for transportation projects could result. The 2012 AQMP included in the current California State Implementation Plan (SIP) was expected to remedy identified PM-2.5 planning deficiencies.

The federal Clean Air Act requires that non-attainment air basins have EPA approved attainment plans in place. This requirement includes the federal one-hour ozone standard even though that standard was revoked almost ten years ago. There was no approved attainment plan for the one-hour federal standard at the time of revocation. Through a legal quirk, the SCAQMD is now required to develop an AQMP for the long since revoked one-hour federal ozone standard. Because the current SIP for the basin contains a number of control measures for the 8-hour ozone standard that are equally effective for one-hour levels, the 2012 AQMP was believed to satisfy hourly attainment planning requirements.

AQMPs are required to be updated every three years. The 2012 AQMP was adopted in early 2013. An updated AQMP was required for completion in 2016. The 2016 AQMP was adopted by the SCAQMD Board in March, 2017, and has been submitted the California Air Resources Board for forwarding to the EPA. The 2016 AQMP acknowledges that motor vehicle emissions have been effectively controlled and that reductions in NOx, the continuing ozone problem pollutant, may need to come from major stationary sources (power plants, refineries, landfill flares, etc.). The current attainment deadlines for all federal non-attainment pollutants are now as follows:

8-hour ozone (70 ppb) 2032

Annual PM-2.5 (12 $\mu g/m^3$) 2025

8-hour ozone (75 ppb) 2024 (old standard)

1-hour ozone (120 ppb) 2023 (rescinded standard)

24-hour PM-2.5 (35 $\mu g/m^3$) 2019

Standards of Significance

Air quality impacts are considered "significant" if they cause clean air standards to be violated where they are currently met, or if they "substantially" contribute to an existing violation of standards. Any substantial

emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of the California CEQA Guidelines offers the following four tests of air quality impact significance. A project would have a potentially significant impact if it:

a) Conflicts with or obstructs implementation of the applicable air quality plan.
b) Results in a cumulatively considerable net increase of any criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
c) Exposes sensitive receptors to substantial pollutant concentrations.
d) Creates objectionable odors affecting a substantial number of people.

Primary Pollutants
Air quality impacts generally occur on two scales of motion. Near an individual source of emissions or a collection of sources such as a crowded intersection or parking lot, levels of those pollutants that are emitted in their already unhealthful form will be highest. Carbon monoxide (CO) is an example of such a pollutant. Primary pollutant impacts can generally be evaluated directly in comparison to appropriate clean air standards. Violations of these standards where they are currently met, or a measurable worsening of an existing or future violation, would be considered a significant impact. Many particulates, especially fugitive dust emissions, are also primary pollutants. Because of the non-attainment status of the South Coast Air Basin (SCAB) for PM-10, an aggressive dust control program is required to control fugitive dust during project construction.

Secondary Pollutants
Many pollutants, however, require time to transform from a more benign form to a more unhealthful contaminant. Their impact occurs regionally far from the source. Their incremental regional impact is minute on an individual basis and cannot be quantified except through complex photochemical computer models. Analysis of significance of such emissions is based upon a specified amount of emissions (pounds, tons, etc.) even though there is no way to translate those emissions directly into a corresponding ambient air quality impact. Because of the chemical complexity of primary versus secondary pollutants, the SCAQMD has designated significant emissions levels as surrogates for evaluating regional air quality impact significance independent of chemical transformation processes. Projects with daily emissions that exceed any of the following emission thresholds are recommended by the SCAQMD to be considered significant under CEQA guidelines.

Table III-5
DAILY EMISSIONS THRESHOLDS

Pollutant	Construction	Operations
ROG	75	55
NOx	100	55
CO	550	550
PM-10	150	150
PM-2.5	55	55
SOx	150	150
Lead	3	3

Source: SCAQMD CEQA Air Quality Handbook, November, 1993 Rev.

Impact Analysis

a. *Less Than Significant Impact* – Projects such as the proposed development of a new 0.60 MG water storage reservoir do not directly relate to the AQMP in that there are no specific air quality programs

or regulations governing general development. This makes sense since, once installed, reservoirs do not generate new emissions. Conformity with adopted plans, forecasts and programs relative to population, housing, employment and land use are the primary yardsticks by which impact significance of planned growth is determined. Based on the analysis of the County's General Plan Land Use section, the proposed Project is consistent with the adopted County's General Plan. Furthermore, water production facilities are zone and land use independent because they are needed to support all types of development. Thus, the proposed Project is consistent with regional planning forecasts maintained by SCAG regional plans. The SCAQMD, however, while acknowledging that the AQMP is a growth-accommodating document, does not favor designating regional impacts as less than significant only because of consistency with regional growth projections. Air quality impact significance for the proposed Project has therefore been analyzed on a project-specific basis. As the analysis of project-related emissions provided below indicates, the proposed Project will not cause or be exposed to significant air pollution, and is, therefore, consistent with the applicable air quality plan.

b. *Less Than Significant With Mitigation Incorporated* – Air pollution emissions associated with the proposed Project would occur over both a short and long-term time period. Short-term emissions include fugitive dust from construction activities (i.e., Site prep, demolition, grading, and exhaust emission) at the Site. Long-term emissions generated by future operation of the proposed reservoir are negligible as minimal additional energy is anticipated to be required.

Construction Emissions
CalEEMod was developed by the SCAQMD to provide a model by which to calculate both construction emissions and operational emissions from a variety of land use projects. It calculates both the daily maximum and annual average emissions for criteria pollutants as well as total or annual greenhouse gas (GHG) emissions.

The proposed Project is proposing to construct a second reservoir in order to enable SGVWC to continue to provide adequate services to the Río Hondo College campus. The existing Plant No. 7 facility is located within an approximately 0.3-acre site, and it currently includes one 0.75 MG welded steel storage reservoir (66 feet in diameter by 40 feet high). The site is currently only accessible through a gated access driveway. The existing water storage reservoir is operational and in fair condition. The development of the Project will require the following construction activities at the Site:

- grading for the reservoir foundation,
- construction of a new 0.60 MG water storage reservoir (60 feet in diameter by 40 feet high)
- related piping, pavement.

Construction was modeled in CalEEMod2016.3.2 using the indicated construction equipment and schedule for a project of this size as shown in Table III-6.

Table III-6
CONSTRUCTION ACTIVITY EQUIPMENT FLEET

Phase Name and Duration	Equipment
Grading 2 months	1 Dozer
	1 Loader/Backhoe
	1 Grader
	1 Excavator
New Tank Construction 6 months	1 Crane/Hoe Ram
	1 Forklift
	2 Concrete Pumps
	1 Loader/Backhoe
	1 Generator Set
	4 Welders
Painting 2 months	2 Air Compressors
Drainage and Piping 2 months	1 Trencher
	1 Roller
	1 Loader/Backhoe
	1 Forklift
	1 Dozer

Utilizing this indicated equipment fleet and durations shown in Table III-6 the following worst-case daily construction emissions are calculated by CalEEMod and are listed in Table III-7.

Table III-7
CONSTRUCTION ACTIVITY EMISSIONS
MAXIMUM DAILY EMISSIONS (pounds/day)

Maximal Construction Emissions	ROG	NOx	CO	SO_2	PM-10	PM-2.5
2021	2.1	14.7	16.4	0.0	1.5	1.0
2022	2.0	13.5	16.1	0.0	1.1	0.8
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**

Peak daily construction activity emissions are estimated to be below SCAQMD CEQA thresholds without the need for added mitigation. However, though construction activities are not anticipated to cause dust emissions to exceed SCAQMD CEQA thresholds, emissions minimization through enhanced dust control measures is recommended for use because of the non-attainment status of the air basin. As such, the following mitigation measure shall be implemented:

AIR-1 ***Fugitive Dust Control. The following measures shall be incorporated into project plans and specifications for implementation during construction:***

- ***Apply soil stabilizers to inactive areas.***
- ***Prepare a high wind dust control plan and implement plan elements and terminate soil disturbance when winds exceed 25 mph.***
- ***Stabilize previously disturbed areas if subsequent construction is delayed.***
- ***Apply water to disturbed surfaces and haul roads 3 times/day.***

- ***Replace ground cover in disturbed areas immediately upon the completion of the disturbance in that area.***
- ***Reduce speeds on unpaved roads to less than 15 mph.***
- ***Trenches shall be left exposed for as short a time as possible.***
- ***Identify proper compaction for backfilled soils in construction specifications.***

This measure shall be implemented during construction, and shall be included in the construction contract as a contract specification.

Similarly, ozone precursor emissions (ROG and NOx) are calculated to be below SCAQMD CEQA thresholds. However, because of the regional non-attainment for photochemical smog, the use of reasonably available control measures for diesel exhaust is recommended. Combustion emissions control options include:

AIR-2 ***<u>Exhaust Emissions Control</u>. The following measures shall be incorporated into Project plans and specifications for implementation:***

- ***Utilize off-road construction equipment that has met or exceeded the maker's recommendations for vehicle/equipment maintenance schedule.***
- ***Contactors shall utilize Tier 4 or better heavy equipment.***
- ***Enforce 5-minute idling limits for both on-road trucks and off-road equipment.***

With the above mitigation measures, any impacts related to construction emissions are considered less than significant. No further mitigation is required.

Operational Emissions
The proposed Project will not require substantial additional operational energy. The proposed reservoir operates by gravity and is fed by an existing off-site booster station. The existing booster will not be running more frequently to fill the new reservoir (only once for the initial filing). Further electrical consumption has no single uniquely related air pollution emissions source because power is supplied to and drawn from a regional grid. Electrical power is generated regionally by a combination of non-combustion (nuclear, hydroelectric, solar, wind, geothermal, etc.) and fossil fuel combustion sources. There is no direct nexus between consumption and the type of power source or the air basin where the source is located. Operational air pollution emissions from electrical generation are therefore not attributable on a project-specific basis.

Conclusion
With the incorporation of mitigation measures **AIR-1** and **AIR-2**, the development of the Project would have a less than significant potential to 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. *Less Than Significant Impact* – The SCAQMD has developed analysis parameters to evaluate ambient air quality on a local level in addition to the more regional emissions-based thresholds of significance. These analysis elements are called Localized Significance Thresholds (LSTs). LSTs were developed in response to Governing Board's Environmental Justice Enhancement Initiative 1-4 and the LST methodology was provisionally adopted in October 2003 and formally approved by SCAQMD's Mobile Source Committee in February 2005.

Use of an LST analysis for a project is optional. For the proposed Project, the primary source of possible LST impact would be during construction. LSTs are applicable for a sensitive receptor where it is possible that an individual could remain for 24 hours such as a residence, hospital or convalescent facility.

LSTs are only applicable to the following criteria pollutants: oxides of nitrogen (NOx), carbon monoxide (CO), and particulate matter (PM-10 and PM-2.5). LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor.

LST screening tables are available for 25, 50, 100, 200 and 500 meter source-receptor distances. Major uses surrounding the Site include: the Puente Hills Landfill is located to the east and north of the Site; Río Hondo College is to the west of the Site; and, the Rose Hills Memorial Park and Mortuary facilities are to the south. Although not strictly a sensitive use because it is not occupied 24 hours a day, to be conservative the distance to the closest Río Hondo College building of almost 1,500 feet was used. Therefore a 500-meter separation distance was used.

The SCAQMD has issued guidance on applying CalEEMod to LSTs. LST pollutant screening level concentration data is currently published for 1, 2 and 5 acre sites for varying distances. For this project, the most stringent thresholds for a 1-acre Site were applied.

The following thresholds and emissions in Table III-8 are therefore determined (pounds per day):

Table III-8
LST AND PROJECT EMISSIONS (pounds/day)

LST 1 acre/500 meters West San Gabriel Valley	**CO**	**NOx**	**PM-10**	**PM-2.5**
LST Thresholds	7,270	164	152	77
Max On-Site Emissions				
2021	16	15	2	1
2022	16	13	1	1
Exceeds Threshold?	**No**	**No**	**No**	**No**

CalEEMod Output in Appendix

LSTs were compared to the maximum daily construction activities.

As seen in Table III-8, LST impacts are less than significant.

Construction equipment exhaust contains carcinogenic compounds within the diesel exhaust particulates. The toxicity of diesel exhaust is evaluated relative to a 24-hour per day, 365 days per year, 70-year lifetime exposure. The SCAQMD does not generally require the analysis of construction-related diesel emissions relative to health risk due to the short period for which the majority of diesel exhaust would occur. Health risk analyses are typically assessed over a 9-, 30-, or 70-year timeframe and not over a relatively brief construction period due to the lack of health risk associated with such a brief exposure. Therefore, the proposed Project would have a less than significant potential to expose sensitive receptors to substantial pollutant concentrations.

d. *Less Than Significant Impact* – Substantial odor-generating sources include land uses such as agricultural activities, feedlots, wastewater treatment facilities, landfills or various heavy industrial uses. The proposed Project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. The proposed Project's operations (pumping and storage) are an essentially closed system with negligible odor potential. Odors will be briefly detectable during application of the interior epoxy coating and outdoor paint application on the reservoir shell during construction. Good painting practice (low wind speeds, high efficiency sprayers, and full plastic containment) will minimize odor or overspray and paint transport. Furthermore, the proposed Project would be required to comply with SCAQMD Rule 1113, which

requires the use of only "Low-Volatile Organic Compounds (VOC)" paints. Thus, through the required compliance with SCAQMD Rule 1113, impacts under this issue are considered less than significant. No mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or 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?	☐	☐	☐	☒

SUBSTANTIATION: The following information is provided based on a Biological Resources Assessment prepared for the Site. The assessment was conducted by Jacobs Engineering Group, Inc. dated May 2021 and is titled "*Biological Resources Assessment for Plant No. 7 Reservoir Project, Río Hondo College – Whittier, CA, San Gabriel Valley Water Company (Updated due to revised Site plan)*." The following information is abstracted from the Biological Resources Assessment (BRA) provided as Appendix 2a. A second letter report was prepared to account for the Presence/Absence Surveys that were conducted in accordance with the United States Fish and Wildlife Service (USFWS) to address the potential for coastal California gnatcatcher (*Polioptila californica californica*). This letter report is titled "*Subject: 45-Day — Presence/Absence Surveys for Coastal California Gnatcatcher (Polioptila californica californica) for Plant No. 7 Reservoir Project, Río Hondo College – Whittier, CA, Los Angeles County, California. Survey Conducted on behalf of San Gabriel Valley Water Company"* and was prepared by Venandi Inc dated April 11, 2022 (Appendix 2b).

General Site Conditions

The Project area of potential effects (APE) is situated on the southern rim of the San Gabriel Valley, a broad inland valley extending from the San Rafael Hills in the west to San Dimas in the east and bounded by the San Gabriel Mountains on the north and the La Puente Hills on the south. More specifically, it lies in the northern La Puente Hills, surrounded by the Rose Hills Memorial Park and Mortuary to the south, Río Hondo College to the west, and the Puente Hills Landfill to the north and east.

This vegetation was dominated by sugar bush (Malosma laurna), lemonade sumac (Rhus integrifolia), and lilac (Ceanothus sp.). A number of other subshrubs species made up most of other cover, with some annual species growing in gaps between perennials. This vegetation is very dense where it occurs on the Site.

Wildlife at the study area consisted of common species and species associated with open, disturbed areas. The most abundant species detected during the Site visit were birds such as mourning dove (*Zenaida macroura*), house finch (*Carpodacus mexicanus*) and northern mockingbird (*Mimus polyglottos*); and California ground squirrel (*Otospermophilus beecheyi*).

Conclusion

Sensitive Biological Resources

The BRA surveys were conducted by Jacobs in April 2021 to identify potential habitat for special status wildlife within the proposed Project APE. No special status wildlife species, including state and/or federally listed threatened or endangered species, were observed within the proposed Project APE during the reconnaissance-level assessment survey and none are expected to occur. Due to the environmental conditions on site and the adjacent disturbances, the proposed Project APE is likely not suitable to support any of the special status wildlife species that have been documented in the Project vicinity (within approximately 3 miles).

The proposed Project APE contains only marginally suitable habitat for coastal California gnatcatcher. No other sensitive habitats, including any USFWS primary constituent elements for the designated Critical Habitat for any federally listed species, and the project will not result in adverse modification of Critical Habitat. However, a focused presence/absence surveys for coastal California gnatcatcher (*Polioptila californica californica*) has been conducted, and the species is absent from the Site. Given the species is absent and the habitat is marginally suitable, the Site does not contribute to the recovery of the species.

Coastal California Gnatcatcher (*Polioptila californica californica*)

The Presence/Absence Surveys for the coastal California gnatcatcher were performed to satisfy the 45-day reporting requirements for the 2021-2022 non-breeding season presence/absence surveys for coastal California gnatcatcher (*Polioptila californica californica*) conducted by Brian Karpman at the request of the SGVWC. Vendani Inc conducted the coastal California gnatcatcher non-breeding season protocol surveys for the proposed Project.

The Presence/Absence surveys for coastal California Gnatcatcher summarized in this report were conducted by permitted biologists: Brian Karpman (USFWS 10(A) permit number: TE – 01768B-1). Focused surveys were conducted according to the USFWS presence/absence survey protocol published in 1997. Nine focused surveys were conducted between December 19, 2021 and March 28, 2022. The surveys were conducted between 7:00 AM and 12:00 PM avoiding inclement weather that could affect target species detection. Recorded vocalizations were played in suitable habitat and discontinued if coastal California Gnatcatchers were located or potential predators were present. Table IV-1, below, provides specific survey data provided by the biologist.

Coastal California gnatcatchers were not present in the proposed Project's work area at the time of surveys. The habitat within the Site was dominated by tall mustard and sparse chaparral throughout. The potential of the coastal California gnatcatcher utilizing the area was determined to be low. In the surrounding areas

several hundred feet away, more suitable habitat for the coastal California gnatcatcher could be seen. It is possible for coastal California gnatcatchers to use the Site, but it would most likely just be moving through.

Table IV-1
CAGN SURVEY RECORD

Survey Date	CAGN Survey #	Start Time	End Time	Air Temp. (F)	Cloud Cover	Wind Speed (MPH)
12/19/2021	1	11:00 am	11:55 am	64 F	0%	1-3 MPH
1/3/2022	2	9:10 am	10:10 am	52 F	0%	0 MPH
1/18/2022	3	7:00 am	8:00 am	51 F	40%	0 MPH
1/31/2022	4	8:10 am	9:30 am	49 F	40%	0 MPH
2/14/2022	5	8:00 am	9:30 am	54 F	40%	0-2 MPH
2/28/2022	6	7:20 am	8:30 am	61 F	0%	1-2 MPH
3/14/2022	7	9:45 am	7:00 am	60 F	0%	0-2 MPH
3/21/2022	8	7:30 am	8:40 am	54 F	0%	0 MPH
3/28/2022	9	7:00 am	8:10 am	57 F	100%	2-4 MPH

Nesting Birds
There is habitat within the proposed Project APE that is suitable to support nesting birds, including both natural and urban environments. Most native bird species are protected from unlawful take by the Migratory Bird Treaty Act (MBTA). In December 2017, the Department of the Interior (DOI) issued a memorandum concluding that the MBTA's prohibitions on take apply "[...] only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs." Then in April 2018, the USFWS issued a guidance memorandum that further clarified that the take of migratory birds or their active nests (i.e., with eggs or young) that is incidental to, and not the purpose of, an otherwise lawful activity does not constitute a violation of the MBTA. However, the State of California provides additional protection for native bird species and their nests in the California Fish and Game Code (FGC).

In general, impacts to all bird species (common and special status) can be avoided by conducting work outside of the nesting season, which is generally February 1st through September 1st. However, if all work cannot be conducted outside of nesting season, mitigation is recommended.

Jurisdictional Waters
The result of the jurisdictional waters assessment is that there are no wetland or non-wetland waters of the United States (WOTUS) or waters of the State potentially subject to regulation by the USACE under Section 404 of the Clean Water Act (CWA), the Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and/or Porter Cologne Water Quality Control Act, or the CDFW under Section 1602 of the FGC, respectively, within the proposed Project Site. Therefore, the proposed Project will not impact and jurisdictional waters and no State or federal jurisdictional waters permitting will be required.

Impact Analysis

a. *Less Than Significant With Mitigation Incorporated* – Implementation of the proposed Project may have a potential for an adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or USFWS. The proposed Project area lies within the range of several sensitive species including several that have been documented in the project vicinity (approximately 3 miles), namely: Swainson's hawk (*Buteo*

swainsoni) – ST[1]; California gnatcatcher (*Polioptila californica californica*) – FT/DCH; Least Bell's vireo (*Vireo bellii pusillus*) – FE/SE; Southwestern Willow Flycatcher (*Empidonax traillii extimus*) - FE/SE; Crotch bumble bee (*Bombus crotchii*) – SCE; and, Western Yellow-billed cuckoo (*Coccyzus americanus occidentalis*) – FT/SE. The proposed Project is located within the mapped federal Designated Critical Habitat of the coastal California gnatcatcher. Although there are remnant patches of native chaparral sage scrub plants, they are sporadically scattered amongst non-native invasive species, and adjacent to existing roads and developed areas; and are unlikely to support sensitive species. However, focused presence/absence surveys for coastal California gnatcatcher (*Polioptila californica californica*) were recommended in order to ensure that the habitat within the Site does not have primary constituent elements that would support the gnatcatcher, and the project would not contribute to the recovery of the species. The focused surveys were conducted and the results thereof are documented in Appendix 2b. Coastal California gnatcatchers were not present in the proposed Project's work area at the time of surveys. The habitat within the Site was dominated by tall mustard and sparse chaparral throughout. The potential of the coastal California gnatcatcher utilizing the area was determined to be low. In the surrounding areas several hundred feet away, more suitable habitat for the coastal California gnatcatcher could be seen. It is possible for coastal California gnatcatchers to use the Site but it would most likely just be moving through. Thus, based on the results of the survey, this species is considered absent from the proposed Project's area for a period of one year.

BIO-1 The results of the coastal California gnatcatcher presence/absence survey determined that the species is absent from the Site. Construction shall commence prior to March 28, 2023, or a follow up presence/absence survey for the coastal California gnatcatcher shall be conducted in accordance with USFWS protocol for this species.

Furthermore, there were no listed plant species identified with potential to occur on the Site, and due to the disturbances onsite, and being surrounded by the Los Angeles metropolis, no suitable habitat for special status plants species occurs within the proposed Project APE. Given that no other sensitive species have been identified as having a potential to exist within or be impacted by the proposed Project, and with the implementation of MM **BIO-1**, above, the proposed Project would have a less than significant potential to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

b. *Less Than Significant With Mitigation Incorporated* – Implementation of the proposed Project has a potential to have an adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. Habitat that exists within and adjacent to the approximately 0.22-acre reservoir Site primarily consists of nonnative landscaping, disturbed chaparral, and developed and disturbed land. No intermittent or ephemeral dry washes that would meet the definitions of State and federal jurisdictional waters as defined by Section 1600 of the SFGC or WOTUS as defined by Section 404 of the CWA occur on the Site. Therefore, no regulatory permits from these agencies will be required for this project. Furthermore, the BRA and subsequent coastal California gnatcatcher focused presence/absence survey concluded that, while the proposed Project is located within federal Designated Critical Habitat of the coastal California gnatcatcher, the habitat within the Site is unlikely to support this sensitive species, and given that the species was not observed during the presence/absence survey, the modification of the habitat within the Site is not anticipated to result in loss of suitable critical habitat for coastal California gnatcatcher. MM **BIO-1** will ensure that the proposed Project follows USFWS protocol for additional presence/absence surveys should construction take place in more than one year from the conclusion of the coastal California gnatcatcher surveys that were conducted between December of

[1] Definitions - status: Fed = federal, FE = federal endangered, FT = federal threatened, FPE = federally proposed for listing as endangered, FPT = federally proposed for listing as threatened, FC = federal candidate species, FSC = federal special concern species, State = state of California, SE = state endangered, ST = state threatened, SCE = state candidate for listing as endangered, SCT = state candidate for listing as threatened, MBTA = Migratory Bird Treaty Act protected, SFP = State Fully Protected Species

2021 and March of 2022. Other than the critical habitat discussed above, the mapped project is not located within any USFWS designated Critical Habitat for any other threatened or endangered species and will not impact any Critical Habitat, or otherwise sensitive habitats. Based on the field survey conducted by Jacobs and the presence/absence survey conducted by Vendani Inc, as well as the information contained in Appendices 2a and 2b, no significant impacts to riparian habitat or other sensitive communities are anticipated to occur as a result of implementation of the proposed Project, and impacts can be fully mitigated to a level of less than significance with the implementation of MM **BIO-1**.

c. *No Impact* – According to the data gathered by Jacobs in Appendix 2a, no federally protected wetlands occur within the project footprint. Therefore, implementation of the proposed Project will have no potential to impact state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. No mitigation is required.

d. *Less Than Significant With Mitigation Incorporated* – Based on the field survey of the Site, the project will not substantially interfere with the movement of any native resident or migratory species or with established native or migratory wildlife corridors, or impede the use of native nursery sites. Once constructed, much of the Project area will be enhanced, but will remain similar to that which exists at present. However, the State does protect all migratory and nesting native birds. Avian species observed in the Project area include common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), Say's phoebe (*Sayornis saya*), bushtit (*Psaltriparus minimus*) and mourning dove (*Zenaida macroura*). Further, the Site and surrounding area consists of Sonoran mixed woody scrub habitat that is suitable to support nesting birds. Thus, the Project area may include locations that function as nesting locations for native birds. To avoid impacting nesting birds as required by the MBTA and FGC, the following mitigation measure shall be implemented:

BIO-2 ***All Project activities on-site shall be conducted outside of the nesting bird season (generally, raptor nesting season is January 1 through September 15; and passerine bird nesting season is February 1 through September 1) to the maximum extent feasible. If Project activities begin outside of nesting season, a pre-construction survey shall be performed by a qualified biologist to verify the absence of nesting birds. A qualified biologist shall conduct the pre-activity survey within the Project footprint (including access routes) and a 300-foot buffer surrounding the Project area, no more than two hours prior to initiating Project activities.***

If Project activities begin during the nesting bird season (generally, raptor nesting season is January 1 through September 15; and passerine bird nesting season is February 1 through September 1), nesting bird surveys shall be conducted by a qualified avian biologist no more than three (3) days prior to Project initiation. Preconstruction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests containing eggs or young are found during the preconstruction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species-specific and shall be at least 100 feet for passerines and 300 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have

fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.

Thus, with implementation of the above measure, any effects on wildlife movement or the use of wildlife nursery sites can be reduced to a less than significant impact.

e. *Less Than Significant Impact* – Development of the proposed Project would have a less than significant potential to conflict with any local policies or ordinances protecting biological resources. Impacts to biological resources have been addressed above under issues IV(a-d). Past site disturbance on the existing reservoir site has eliminated any potential for other biological resources that might be protected to exist within the Site. Therefore, the potential for the proposed Project to conflict with local policies or ordinances pertaining to biological resources would be considered less than significant.

f. *No Impact* – The proposed Project's footprint and surrounding area are not covered by an adopted Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP) such as the East Los Angeles County – Matrix Natural Community Conservation Plan, and there are no other adopted plans to protect native habitats or natural communities that affect the Site. Therefore, no impacts are anticipated and no mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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?	☐	☒	☐	☐

SUBSTANTIATION: The following information is provided based on a Historical/Archaeological resources Survey Report of the Site. The report was conducted by CRM TECH dated May 29, 2021 and is titled "*Historical/Archaeological Resources Survey Report, San Gabriel Valley Water Company Plant No. 7 Reservoir Project*" (Appendix 3a). A follow on memorandum to address a minor proposed location change titled "*Addendum to Historical/Archaeological Resources Survey, San Gabriel Valley Water Company Plant No. 7 Reservoir Project, near the City of Whittier, Los Angeles County, California*" was prepared by CRM TECH, dated December 5, 2021, and is provided as Appendix 3b. The following information is abstracted from these reports. It provides an overview and findings regarding the cultural resources found within the project area.

Background

The purpose of the Cultural Resources study is to provide the Río Hondo College and SGVWC with the necessary information and analysis to determine whether the proposed Project would cause substantial adverse changes to any "historical resources" or "tribal cultural resources," as defined by CEQA, that may exist in or around the proposed Project area.

In order to identify such resources, CRM TECH conducted a historical/archaeological resources records search, pursued historical background research, contacted Native American tribe representatives, and carried out an intensive-level field survey of the entire proposed Project area. Toward this purpose, CRM TECH initiated a historical/archaeological resources records search and a Native American Sacred Lands File search, pursued historical background research, and carried out an intensive-level field survey. The research results indicate that an existing water tank next to the Site, known as the Plant No. 7 reservoir, dates to the 1964-1966 construction of Río Hondo College. Because it is historical (i.e., more than 50 years) in age, the Plant No. 7 reservoir was recorded into the California Historical Resources Inventory during this study. As a minor component of the campus and a common, utilitarian feature of the late-historic-period infrastructure, however, the tank does not appear eligible for listing in the California Register of Historical Resources, either individually or as a part of Río Hondo College. Therefore, it does not meet the statutory definition of a "historical resource" for CEQA-compliance purposes.

According to the Addendum (Appendix 3b) to the initial Cultural Resources Report (Appendix 3a), most of the newly added acreage was found to be in an undeveloped but previously disturbed condition, and portions of the ground surface showed evidence of relatively recent earth-moving operations. No features or artifacts of prehistoric or historical origin were observed within the additional proposed Project area.

Based on the research results summarized in the Addendum, the finding of the original survey—that the proposed Project would not cause a substantial adverse change to any known "historical resources" (Tang et al. 2021:15)—and the recommendations made in that study remain valid and appropriate after the incorporation of the additional acreage.

Therefore, no other potential cultural resources were encountered within or adjacent to the proposed Project area throughout the course of this study. Based on these findings, the cultural resources report concluded the proposed Project would result in *No Impact* regarding "historical resources." No further cultural resources investigation is recommended for the project unless construction plans undergo such changes as to include areas not covered by this study. However, if buried cultural materials are encountered during any earth-moving operations associated with the Project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

Impact Analysis

a&b. *Less Than Significant With Mitigation Incorporated* – CEQA establishes that "a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

Per the above discussion and definition, no archaeological sites or isolates were recorded within the project boundaries; thus, none of them requires further consideration during this study. In light of this information and pursuant to PRC §21084.1, the following conclusions have been reached for the project:

- No historical resources within or adjacent to the project area have any potential to be disturbed as they are not within the proposed area in which the facilities will be constructed and developed, and thus, the project as it is currently proposed will not cause a substantial adverse change to any known historical resources.
- No further cultural resources investigation is necessary for the proposed Project unless construction plans undergo such changes as to include areas not covered by this study.

However, if buried cultural materials are discovered during any earth-moving operations associated with the project, the following mitigation measure shall be implemented:

CUL-1 Should any cultural resources be encountered during construction of these facilities, earthmoving or grading activities in the immediate area of the finds shall be halted and an onsite inspection shall be performed immediately by a qualified archaeologist. Responsibility for making this determination shall be with SGVWC, in conjunction with Río Hondo College. The archaeological professional shall assess the find, determine its significance, and make recommendations for appropriate mitigation measures within the guidelines of the California Environmental Quality Act.

With the above mitigation measure, the potential for impacts to cultural resources will be reduced to a less than significant level. No additional mitigation is required.

c. *Less Than Significant With Mitigation Incorporated* – As noted in the discussion above, no available information suggests that human remains may occur within the Project APE and the potential for such an occurrence is considered very low. Human remains discovered during the project will need to be treated in accordance with the provisions of the Health and Safety Code §7050.5 and PRC §5097.98, which is mandatory. State law (Section 7050.5 of the Health and Safety Code) as well as local laws requires that the Police Department, County Sheriff and Coroner's Office receive notification if human remains are encountered. Compliance with these laws is considered adequate mitigation for potential impacts, the following mitigation measure shall be implemented in relation to discovery and treatment of human remains:

CUL-2 If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the Los Angeles County Coroner shall be

contacted pursuant to State Health and Safety Code §7050.5 and that code enforced for the duration of the Project.

With the incorporation of the above mitigation measure, potential for impact to discovery and treatment of human remains will be reduced to a less than significant level. No additional mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
VI. ENERGY: Would the project:				
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operations?	☐	☒	☐	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☒	☐	☐

SUBSTANTIATION

a&b. *Less Than Significant With Mitigation Incorporated* – The proposed Project would allow for additional, necessary water storage in order to enable SGVWC to continue to provide adequate services to the Río Hondo College campus and would allow for the existing reservoir to be taken out of service when required for routine maintenance. The existing tank operates by gravity and is fed by an existing off-site booster station. The existing booster will not be running more frequently to fill the new reservoir, with the exception of the energy required to facilitate the initial fill of water within the reservoir once in operation. In fact, the installation of a second reservoir at this location would result in less energy use by the booster station as the expanded water storage would result in a less frequent need to fill the reservoir tanks. Therefore, the required energy to operate the proposed Project represents a net zero increase. However, energy would be required to operate construction equipment during construction of the proposed Project.

As stated in Section III, Air Quality, the construction of the proposed Project would require mitigation measures to minimize emissions impacts from construction equipment use (refer to MM **AIR-2**). This mitigation measure also applies to energy resources as they require equipment not in use for 5 minutes to be turned off, and for electrical construction equipment to be used where available. This measure would prevent a significant impact during construction due to wasteful, inefficient, or unnecessary consumption of energy resources, and would also conform to the CARB regulations regarding energy efficiency.

SCE is the primary provider for electricity at the Site, and will continue to provide service though no expanded services are anticipated. According to SCE's website[2], SCE is committed to delivering power reliably and to meet demand; SCE is expanding and upgrading the transmission and distribution networks to meet the region's growing demand for electricity, and improve grid performance, while meeting California's ambitious renewable-power goals. As such, it is anticipated that SCE will continue to have ample power supply to serve the proposed Project without the need for additional electrical capacity. As such, it is not anticipated that the proposed Project would either result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operations, or conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Impacts under these issues are considered less than significant.

[2] https://www.sce.com/about-us/reliability/meeting-demand

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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 onsite or offsite land-slide, 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 wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or Site or unique geologic feature?	☐	☒	☐	☐

SUBSTANTIATION: The following analysis is based on a Preliminary Geotechnical Investigation Report. The report was conducted by ABI Engineering Consultants, Inc. dated April 7, 2022 and is titled “Preliminary Geotechnical Investigation Report Plant No. 7 San Gabriel Valley Water Company, 3600 Workman Mill Road, Whittier, CA” (Appendix 4).

a. Ground Rupture

Less Than Significant Impact – The Site is located in unincorporated North Whittier, which is situated between and around several active faults. Figure VII-1 depicts the locations of the Alquist-Priolo Fault Traces and Hazard Zones as prepared by the California Geologic Survey within the vicinity of the project. According to Figure VII-1, the Site is not located on an active fault or within the nearest Alquist-Priolo fault zone. The Alquist-Priolo fault zones are approximately 3 miles northwest and 3 miles southeast of the Site. Based on this information, the risk for ground rupture at the Site location

is low; therefore, it is not likely that future employees visiting the new reservoir at this Site or employees working at the Site during construction will be subject to rupture from a known earthquake fault. The proposed Project does not propose any human occupancy structures or other structures that will place people on the Site for long periods of time or pose a significant threat to people or property from ground rupture. All structures will be built to meet earthquake building standards, particularly for water storage reservoirs. Therefore, impacts associated within ground rupture would be considered less than significant. No mitigation is required.

Strong Seismic Ground Shaking

Less Than Significant With Mitigation Incorporated – As stated in the discussion above, several faults run through the County, and as with much of southern California, the proposed structure will be subject to strong seismic ground shaking impacts should any major earthquakes occur in the future, particularly due to the Site's proximity to a fault zone, as shown in Figure VII-1. However, it should be noted that the Geotechnical Investigation (Appendix 4) prepared for the Site concluded that the degree of ground shaking at the property will be low to moderate. As a result, and like all other development projects in the County and throughout the southern California region, the proposed Project will be required to comply with all applicable seismic design standards contained in the 2019 California Building Code (CBC), including Section 1613-Earthquake Loads. To protect future structures from severe damage from ground shaking, the following mitigation measure would be implemented by the SGVWC for construction of the reservoir to prevent a catastrophic failure of this facility during a future regional seismic event:

GEO-1 ***SGVWC shall retain a qualified engineering geologist to investigate the Site proposed for water storage reservoirs. The recommendations of the engineering geologist relative to mitigating the potential for ground rupture, ground shaking, landslide, expansive soils and other geological constraints shall be incorporated in the design and construction of these facilities. Design of such facilities shall follow the following design performance criteria. Comprehensive geotechnical investigation shall be required prior to engineering and design development or structural and/or substantial rehabilitation of structures identified under Risk Class I & II, e.g., public facilities, as identified below:***

Risk Class I & II, Structures Critically Needed after Disaster: Structures which are critically needed after a disaster include important utility centers, fire stations, police stations, emergency communication facilities, hospitals, and critical infrastructure elements such as bridges and overpasses, water storage reservoirs, and smaller dams.

Acceptable Damage: Minor non-structural; facility should remain operational and safe, or be suitable for quick restoration of service.

Risk Class III: High occupancy structures; uses are required after disasters, i.e., places of assembly such as schools and churches.

Acceptable Damage: Some impairment of function acceptable; structure needs to remain operational.

Risk Class IV, Ordinary Risk Tolerance: The vast majority of structures in urban areas; most commercial and industrial buildings, small hotels and apartment buildings, and single family residences.

Acceptable Damage: An "ordinary" degree of risk should be acceptable. The criteria envisioned by the Structural Engineers Association of California

provide the best definition of the "ordinary" level of acceptable risk. These criteria require that structures be able to:

a. Resist minor earthquakes without damage;
b. Resist moderate earthquakes without structural damage, but with some non-structural damage; or
c. Resist major earthquakes, of the intensity or severity of the strongest experienced in California, without collapse, but with some structural, as well as non-structural damage.

Risk Class V, moderate to High Tolerance: Open space uses, such as farms, ranches and parks without high occupancy structures; warehouses with low intensity employment; and the storing of non-hazardous materials.

Acceptable Damage: Not applicable.

With the implementation of the MM **GEO-1**, and compliance with the CBC and the use of best management design practices will ensure that structural integrity will be maintained in the event of an earthquake. Therefore, with the implementation of the MM **GEO-1,** the proposed Project would have a less than significant potential to directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault.

Seismic-Related Ground Failure Including Liquefaction

No Impact – The three factors determining whether a Site is likely to be subject to liquefaction include seismic shaking, type and consistency of earth materials, and groundwater level. Liquefaction of saturated cohesionless soils can be caused by strong ground motion resulting from earthquakes. Soil liquefaction is a phenomenon in which saturated, cohesionless soils lose their strength due to the build-up of excess pore water pressure during cyclic loading such as that induced by earthquakes. According to the Seismic Hazard Program: Liquefaction Zones map prepared by the California Geologic Survey (Figure VII-2), there are no liquefaction zones located within or adjacent to the Site. Furthermore, the Geotechnical Investigation (Appendix 4) prepared for the proposed Project concluded that the property is underlain by consolidated claystone and mudstone – lithologies considered to be non-liquefiable. Therefore, with no evidence of liquefaction located on or near the Site, the proposed Project would have no potential to directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction.

Landslides

Less Than Significant With Mitigation Incorporated – According to the Seismic Hazard Program: Landslide Zones map prepared by the California Geologic Survey (CGS) (Figure VII-3), the proposed Project Site is located within an area that is susceptible to landslides. However, according to the California Landslide Inventory: CGS Current Standard, Active/Historic and Dormant Young map (Figure VII-4), the proposed Project Site is not located within an area that has experienced a landslide in the past. Regardless, the Geotechnical Investigation provided as Appendix 4 to this IS/MND indicates that a slide is present in the north- facing slope, northerly of the site of the existing Plant #7 tank. However, there are no landslides mapped or existing in the new tank Site area. Additionally, a stability analysis was performed for the proposed 2:1 (horizontal: vertical) cut slope upgradient of the proposed tank location as shown on the conceptual development plan. With the implementation of geotechnical recommendations, in addition to seismic factor recommendations identified in the Geotechnical Report, as well as implementation of MM **GEO-1**, the proposed Project would have a less than significant potential to directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault. The geotechnical recommendations and seismic factor recommendations shall be enforced through MM **GEO-2**, below, which will ensure that the potential for landslide and slope instability at the Site are addressed and fully mitigated to a level of less than significant.

GEO-2 Based upon the preliminary geotechnical investigation (Appendix 4 of this document), all of the recommended seismic design parameters identified in Appendix 4 (beginning on Page 6) in addition to all of the geotechnical and geologic recommendations shall identified in Appendix 4 (beginning on Page 9) shall be implemented by SGVWC. Implementation of these specific measures will address all of the identified geotechnical constraints identified at the Site, including landslide and slope stability on future project-related structures.

b. *Less Than Significant With Mitigation Incorporated* – During construction and operation, the proposed Project has a potential for soil erosion. Due to the area of disturbance associated with Site clearing and grading, there is a potential for soil erosion to occur. Stabilization of the vegetated Site upon which the reservoir will be constructed is incorporated into the Site design, as stabilization measures are necessary to ensure that the reservoir is placed on engineered fill. Once the level surface has been manufactured, the potential for soil erosion will be minimal. However, during the proposed Project's construction when soils are exposed, temporary soil erosion may occur, which could be exacerbated by rainfall. The proposed Project grading would be managed through the preparation through implementation of best management practices to achieve concurrent water quality controls after construction is completed and the 0.60 MG reservoir is in operation. Additionally, recommended design and construction measures outlined in the Geotechnical Investigation provided as Appendix 4 and enforced through implementation of MM **GEO-1** and **GEO-2** above will ensure that soil erosion is managed during operation of the new reservoir. Additionally, the following mitigation measures shall also be implemented to address these issues:

GEO-3 Stored backfill material shall be covered with water resistant material during periods of heavy precipitation to reduce the potential for rainfall erosion of stored backfill material. Where covering is not possible, measures such as the use of straw bales or sand bags shall be used to capture and hold eroded material on the Site for future cleanup such that erosion does not occur.

GEO-4 All exposed, disturbed soil (trenches, stored backfill, etc.) shall be sprayed with water or soil binders twice a day, or more frequently if fugitive dust is observed migrating from the Site within which the 0.60 MG reservoir with associated water improvements is being constructed.

With implementation of the above mitigation measures, as well as MM **GEO-1** and **GEO-2**, and the mandatory erosion control measures incorporated in the Site design (i.e. extensive compacted fill), the project will not result in substantial soil erosion or the loss of topsoil. No further mitigation is necessary.

c. *Less Than Significant With Mitigation Incorporated* – As previously stated, the proposed Project will develop a new reservoir that will be 60 feet in diameter by 40 feet high with a usable capacity of 0.60 MG. Implementation of the Site design would minimize soil stability. Furthermore, through implementation of the Site design, and implementation of the design measures that have been incorporated into the geotechnical investigation prepared for the project (provided as Appendix 4), which shall be implemented through the implementation of MM **GEO-2**, implementation of the proposed Project would not result in a significant impact from occurring under this issue. The recommended measures that will be enforced through the Geotechnical Investigation as required by MMs **GEO-1** and **GEO-2** will ensure that any potential impacts regarding soil stability will be mitigated to a level of less than significant. Therefore, with implementation of the stabilizing measures identified in the Site plan, as well as MMs **GEO-1** and **GEO-2,** above, the project would not 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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse.

d. *Less Than Significant With Mitigation Incorporated* – The soil on the project area consists of clay loams from the Zaca-Apollo, warm complex. Zaca-Apollo, warm complex 20 to 55 percent slopes. This soil consists of well drained soils on paralithic bedrock, derived from sand stone and siltstone on summit, shoulder, and backslope formations. Expansive soils are generally of a clay type soil, such as the Zaca-Apollo series soils that underlay the Site. This is further confirmed by the Geotechnical Investigation which indicates that the soils encountered immediately beneath the proposed improvements during our exploration were colluvial/residual soil (Qcol/RS) clay (cl) to 15 feet, and Fernando formation to maximum explored depth of 51.5 feet below ground surface (bgs). A representative soil sample at the near surface has an expansive index (EI) of 115. Therefore, the subsurface soils are considered expansive with high expansion potential. Thus, geotechnical design measures that have been included in the Geotechnical Investigation required by MMs **GEO-1** and **GEO-2** would ensure that the engineered fill and foundations used for the Site do not include any expansive soils. Design measures are sufficient to ensure structural integrity of the reservoirs are maintained, and given that no structures are proposed for human occupancy, potential risks to life and property are sufficiently minimized through implementation of MMs **GEO-1** and **GEO-2**, and therefore, the development of the new reservoir will have a less than significant potential to create a substantial risk to life or property by being placed on expansive soils because none exist on the Site. No further mitigation is required.

e. *No Impact* – The proposed Project does not propose any septic tanks or alternative wastewater disposal systems. Therefore, determining if the Site soils are incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater does not apply. No impacts are anticipated. No mitigation is required.

f. *Less Than Significant With Mitigation Incorporated* – The potential for discovering paleontological resources during development of the project is considered highly unlikely based on the fact that the Site has been previously engineered and disturbed at depth. No unique geologic features are known or suspected to occur on or beneath the sites. However, because these resources are located beneath the surface and can only be discovered as a result of ground disturbance activities, the following measure shall be implemented:

GEO-5 Should any paleontological resources be encountered during construction of these facilities, earthmoving or grading activities in the immediate area of the finds shall be halted and an onsite inspection should be performed immediately by a qualified paleontologist. Responsibility for making this determination shall be with SGVWC's onsite inspector. The paleontological professional shall assess the find, determine its significance, and determine appropriate mitigation measures within the guidelines of the California Environmental Quality Act that shall be implemented to minimize any impacts to a paleontological resource.

With incorporation of this contingency mitigation, the potential for impact to paleontological resources will be reduced to a less than significant level. No additional mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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?	☐	☐	☒	☐

SUBSTANTIATION: The following information utilized in this section of this IS/MND was obtained from the following technical study: "*Air Quality and GHG Impact Analyses, San Gabriel Valley Water Company Plant No. 7 Project, Los Angeles County, California"* dated March 15, 2021 prepared by Giroux & Associates. This technical study is provided as Appendix 1 to this document.

a&b. *Less Than Significant Impact* – California has passed several bills and the Governor has signed at least three executive orders regarding greenhouse gases (GHG). GHG statutes and executive orders (EO) include AB 32, SB 1368, EO S-03-05, EO S-20-06 and EO S-01-07. AB 32 is one of the most significant pieces of environmental legislation that California has adopted. A unique aspect of AB 32, beyond its broad and wide-ranging mandatory provisions and dramatic GHG reductions, are the short time frames within which it must be implemented. Major components of AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.
- Requires immediate "early action" control programs on the most readily controlled GHG sources.
- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25-40%, from business as usual, to be achieved by 2020.
- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementing regulations for AB 32 is under way. Maximum GHG reductions are expected to derive from increased vehicle fuel efficiency, from greater use of renewable energy and from increased structural energy efficiency. Additionally, through the California Climate Action Registry (CCAR now called the Climate Action Reserve), general and industry-specific protocols for assessing and reporting GHG emissions have been developed. GHG sources are categorized into direct sources (i.e. company owned) and indirect sources (i.e. not company owned).

Thresholds of Significance

In response to the requirements of SB 97, the State Resources Agency developed guidelines for the treatment of GHG emissions under CEQA. These new guidelines became state laws as part of Title 14 of the California Code of Regulations in March 2010. CEQA Guidelines Appendix G was modified to include GHG as a required analysis element. A project would have a potentially significant impact if it:

- Generates GHG emissions, directly or indirectly, that may have a significant impact on the environment, or,
- Conflicts with an applicable plan, policy or regulation adopted to reduce GHG emissions.

CEQA Guidelines Section 15064.4 specifies how significance of GHG emissions is to be evaluated. The process is broken down into quantification of project-related GHG emissions, making a determination of

significance, and specification of any appropriate mitigation if impacts are found to be potentially significant. At each of these steps, the new GHG guidelines afford the lead agency with substantial flexibility.

Emissions identification may be quantitative, qualitative or based on performance standards. The CEQA Guidelines allow the lead agency to "select the model or methodology it considers most appropriate." The most common practice for transportation/combustion GHG emissions quantification is to use a computer model such as CalEEMod, as was used in the ensuing analysis.

The significance of those emissions then must be evaluated; the selection of a threshold of significance must take into consideration what level of GHG emissions would be cumulatively considerable. The CEQA Guidelines are clear that they do not support a zero net emissions threshold. If the lead agency does not have sufficient expertise in evaluating GHG impacts, it may rely on thresholds adopted by an agency with greater expertise.

On December 5, 2008 the SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold for industrial projects where the SCAQMD is the lead agency (e.g., stationary source permit projects, rules, plans, etc.) of 10,000 Metric Tons (MT) CO_2 equivalent/year. In September 2010, the SCAQMD CEQA Significance Thresholds GHG Working Group released revisions which recommended a threshold of 3,000 MT CO_2e for all land use projects. This 3,000 MT/year recommendation has been used as a guideline for this analysis. In the absence of an adopted numerical threshold of significance, project related GHG emissions in excess of the guideline level are presumed to trigger a requirement for enhanced GHG reduction at the project level.

Construction Activity GHG Emissions

The proposed Project is assumed to require less than one year to complete construction. The CalEEMod2016.3.2 computer model predicts that the construction activities will generate the annual CO_2e emissions identified in Table VIII-1.

Table VIII-1
CONSTRUCTION EMISSIONS (Metric Tons CO_2e)

	CO_2e
Year 2021	139.7
Year 2022	241.4
Total	381.1
Amortized	**12.7**

SCAQMD GHG emissions policy from construction activities is to amortize emissions over a 30-year lifetime. The amortized level is also provided. GHG impacts from construction are considered individually less than significant.

Consistency with GHG Plans, Programs, and Policies

The County of Los Angeles (County) has developed the Community Climate Action Plan (CCAP) to reduce GHG emissions associated with community activities in the unincorporated areas of the County. The CCAP addresses emissions from activities in the following sectors: building energy, transportation, water conveyance and wastewater processing, and waste generation. The CCAP also establishes a GHG reduction target consistent with the State's efforts to reduce GHG emissions and provides a roadmap for successfully implementing GHG reduction measures selected by the County. The County's GHG emissions reduction target of at least 11% below 2010 levels by 2020 is consistent with statewide reductions under AB 32.

Building energy consumption accounts for about 49% of the County's GHG inventory. Transportation emissions from on- and off-road vehicles are the second largest source of emissions (42%). The third largest source is community waste generation (7%). The remaining sources are water conveyance and wastewater generation (2%), agriculture (0.4%), and stationary sources (0.02%).

The County has identified local actions of which the majority include voluntary, incentive-based programs that will reduce emissions from both existing and new development in the County. Actions to address GHG emissions from building energy use are separated into two categories: energy efficiency and renewable energy. Energy efficiency measures reduce actual energy consumption through efficient design, whereas renewable energy measures reduce the carbon intensity of electricity generation.

The proposed Project would consist of installation of a new reservoir to facilitate necessary additional water storage for Río Hondo College. No conflicts exist between the project and the above performance standards; therefore, consistency with the CCAP would result in a less than significant impact with respect to GHG emissions.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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 which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☒	☐	☐

SUBSTANTIATION

a&b. *Less Than Significant With Mitigation Incorporated* – The proposed Project consists of construction a new 0.60 MG reservoir and associated Site improvements. During construction of the proposed new reservoir and associated improvements, there are activities that can expose the public to significant hazards from accidental circumstances. The first pathway occurs when petroleum products are accidentally released from construction equipment or storage facilities. For example, vandalism can cause a release from stored fuels, or a hydraulic hose may break on a large piece of construction equipment. This type of impact is readily mitigated by immediately stopping the construction activity; controlling the accidental release; and carrying out remediation of the area contaminated by the spill. The following mitigation measure addresses this circumstance, and with implementation of this measure, no residual contamination will remain.

HAZ-1 ***Prior to and during grading and construction, should an accidental release of a hazardous material occur, the following actions will be implemented: construction activities in the immediate area will be immediately stopped; appropriate regulatory agencies will be notified; immediate actions will be implemented to limit the volume and area impacted by the contaminant; the***

contaminated material, primarily soil, shall be collected and removed to a location where it can be treated or disposed of in accordance with the regulations in place at the time of the event; any transport of hazardous waste from the property shall be carried out by a registered hazardous waste transporter; and testing shall be conducted to verify that any residual concentrations of the accidentally released material are below the regulatory remediation goal at the time of the event. All of the above sampling or remediation activities related to the contamination will be conducted under the oversight of Los Angeles County Certified Unified Program Agency (CUPA) Site Mitigation Unit (SMU). All of the above actions shall be documented and made available to the appropriate regulatory agencies prior to closure (a determination of the regulatory agency that a site has been remediated to a threshold that poses no hazard to humans) of the contaminated area.

Roadways adjacent to the Site are public roads that can be used by any common carrier to or from the local area. For such transporters, the existing regulatory mandates ensure that the hazardous materials and any hazardous wastes transported to and from the Site will be properly managed. These regulations are codified in Titles 8, 22, and 26 of the California Code of Regulations. For example, maintenance trucks for construction equipment must transport their hazardous materials in appropriate containers, such as tanks or other storage devices. In addition, the haulers must comply with all existing applicable federal, state and local laws and regulations regarding transport, use, disposal, handling and storage of hazardous wastes and material, including storage, collection and disposal. Compliance with these laws and regulations related to transportation will minimize potential exposure of humans or the environment to significant hazards from transport of such materials and wastes.

Operation of the proposed reservoir will not involve potential for routine transport or use of hazardous materials or routine generation of hazardous wastes. Compliance with all federal, state and local regulations, as well as compliance with MM **HAZ-1**, above, will ensure that the project operates and is constructed in a manner that poses no substantial hazards to the public or the environment. Therefore, impacts under these issues are considered less than significant with mitigation incorporated.

c. *No Impact* – The nearest K-12 schools are located at a distance greater than one quarter mile from the Site. However, the proposed Project is located within the confines of Río Hondo College, a Community College and will ultimately serve the College with water storage. Furthermore, the operations of this project do not include any new use of hazardous materials, and thus will not pose a significant risk to any nearby school populations. No impacts are anticipated. No mitigation is required.

d. *No Impact* – The proposed Project is not located in an area that has been included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result it will not create a significant hazard to the public or environment. According to the California State Waterboard's GeoTracker, which provides information regarding Leaking Underground Storage Tanks, there are no locations within a 2,500 foot radius of any of the proposed Project's facilities that is identified as Leaking Underground Storage Tank (LUST) site or Department of Toxic Substances (DTS) site (Figure IX-1 see GeoTracker figure), nor are there any remediated LUST or DTS cleanup sites. Furthermore, the nature of the proposed Project is not such that persons working or residing in the area would be exposed to any hazards from any nearby contaminated sites. Thus, the proposed construction and operation of the Site with a new reservoir, will not create a significant hazard to the population or to the environment from their implementation. No impacts are anticipated. No mitigation is required.

e. *No Impact* – The San Gabriel Valley Airport is located approximately 4.6 miles north of the proposed Project, and the Long Beach Airport is located approximately 13 miles south of the proposed Project.

Given the large distance between the proposed Project and nearby airports, and the location of the proposed Project adjacent to a hill that is at greater elevation than the proposed reservoir will be once constructed, project implementation would not result in a safety hazard for people residing or working in the proposed Project area. Furthermore, there are no private airstrips located within two miles of the Site. Therefore, the proposed Project area has no potential to cause or experience any adverse impact related to private airstrip operations.

f. *Less Than Significant With Mitigation Incorporated* – The proposed Project is located on an access road that is private—Observatory Road—serving SGVWC and Río Hondo College facilities that are not accessible to the public. As such, the proposed Project will be confined to this area with limited access. Maintaining Site access through the whole of construction will be required, and thus will require implementation of a traffic management plan to ensure that Site access and Río Hondo College circulation would not be adversely impacted. The traffic management plan would include, but would not be limited to, the following construction traffic management practices and instruction: limiting construction trips to specific routes within the Río Hondo College to avoid heavily used roadways and to avoid peak hour traffic within the campus as directed by Río Hondo College staff and/or Río Hondo College's management representative, adopting an emergency response and evacuation plan applicable to the duration of construction, and designating parking and construction staging areas that would not conflict with Río Hondo College's operations nor prevent access along Observatory Road. The proposed Project includes the following components: stormwater management BMPs, and a new 0.60 MG water storage reservoir and related piping. Within the Site, the proposed facilities are not anticipated to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, particularly given that SGVWC would be required to comply with the provisions of MM **TRAN-1,** which would require the implementation of the traffic management plan outlined above. Ingress and egress of maintenance trucks and construction vehicles would come from Circle Drive and South Drive within Río Hondo College, which are heavily travelled roads during peak hours by students and visitors of Río Hondo College. Thus, MM **TRAN-1** would address the potential for the proposed Project to result in any disruption of area circulation that might impair implementation of or physically interfere with Río Hondo College's adopted emergency response plan, as none will occur. Therefore, through the implementation of MM **TRAN-1**, the proposed Project will not significantly impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Any impacts under this issue are considered less than significant with mitigation incorporated.

g. *Less Than Significant With Mitigation Incorporated* – The proposed Project is located against the hillside above Río Hondo College. The Site is located in an area with vegetation that was dominated by sugar bush (*Malosma laurna*), lemonade sumac (*Rhus integrifolia*), and lilac (*Ceanothus sp.*). This vegetation is very dense where it occurs on the Site, though the Site is adjacent to some existing developed area, including the Puente Hills Landfill and the Rose Hills Memorial Park and Mortuary facilities. According to the CAL FIRE Fire Hazard Severity Zone Viewer Map (Figure XX-1), the proposed Project is located within Very High and High Hazard Severity Zones within the State Responsibility Area (SRA). The proposed Project does not include the use of flammable or explosive materials. However, during construction, because the proposed Project is located in Very High and High Hazard Severity Zones, construction may exacerbate fire risk temporarily. As such, the proposed Project requires the implementation of MM **WF-1**, which would minimize fire risk during activities that would utilize electric equipment by requiring construction crews to carry fire prevention equipment during activities involving electrical equipment. Additionally, SGVWC will incorporate one or both of the following into the design and construction specs for the proposed Project to minimize the potential for the reservoir itself to exacerbate wildfire risk: a fire hydrant would be incorporated into the proposed Project's design to provide greater fire protection and/or flame resistant paint would be utilized to coat the exterior of the reservoir. Based on the type of uses proposed, the proposed Project has no other identifiable potential to expose people or property to wildland fires. Additionally, it should be noted that the proposed Project will increase the area's water supply capabilities and is viewed as a benefit to fire protection. Therefore, with the implementation of MM **WF-1** to address the potential for wildfire risk during construction, impacts are considered less than significant.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
X. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such 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 onsite or offsite?	☐	☐	☒	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite?	☐	☐	☒	☐
(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?	☐	☐	☒	☐

SUBSTANTIATION

a. *Less That Significant Impact* – The proposed Project consists of construction a new 0.60 MG reservoir, and associated Site improvements. The Site is adjacent to an existing reservoir that will remain in use once the new reservoir is constructed and connected to SGVWC's water distribution system, which provides water service to Río Hondo College. Therefore, the addition of the new reservoir would be comparable to that which exists on Site at present. The surface of the Site as it presently exists is located adjacent to a hillside located in the unincorporated North Whittier, within the La Puente Hills, overlooking Río Hondo College (to the west of the Site), and is located to the south and west of the Puente Hills Landfill. Three sources of potential violation of water quality standards or waste discharge requirements are from generation of municipal wastewater; from stormwater runoff; and potential discharges of pollutants, such as accidental spills. No connection to wastewater is necessary to serve the proposed Project. The proposed Project is required to submit an Erosion and Sediment Control Plan to Los Angeles County, which would ensure that no such water quality violations occur. Given the small size of disturbance at this Site, no other permits are required by Los Angeles County. With implementation of the Erosion and Sediment Control Plan and

their BMPs, the proposed Project will not cause a violation of any water quality standards or waste discharge requirements.

b. *Less Than Significant Impact* – The proposed Project does not propose the installation of any water wells that would directly extract groundwater. The proposed Project will connect to the existing water system that provides water service to Río Hondo College, which is supplied by existing wells within SGVWC's system. The water supplied to Río Hondo College is to be stored in the existing 0.75-MG reservoir and the new 0.60 MG water storage reservoir. The amount of pervious surface on the Site after construction will decrease slightly due to the area that the new reservoir will be constructed upon. The development of the new reservoir itself will allow SGVWC to store a larger volume of water through the addition of a 0.60 MG storage tank, which will ultimately provide necessary additional storage capacity to Río Hondo College in order to enable SGVWC to continue to provide adequate services to the Río Hondo College campus. As such, operation of the new reservoir will require minimal new outside water sources to supply water to the Site. Thus, because of the size and nature of the proposed Project, there is a less than significant potential to substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed Project may impede sustainable groundwater management of the basin as a result of the proposed Project.

c(i). *Less Than Significant Impact* – Impacts to the existing drainage pattern of the Site or area could occur if development of the proposed Project results in substantial on- or off- site erosion or siltation. The Site currently is adjacent to an existing reservoir and will include development of a level surface upon which to construct the new reservoir. The Site design (refer to Figures 3 and 4) will ensure that Site conditions remain stable and surface flows do not result in erosion or sedimentation. All onsite flows will be directed toward the on-site drainage inlet or to the drainage channel via drain pipes, gutters or other means. The proposed Project will require the implementation of an Erosion and Sediment Control Plan that would be submitted to Los Angeles County, and implementation of hazardous material best management practices, which will ensure that any potential discharge of polluted material does not occur or is remediated in the event of an accidental spill. Therefore, with the implementation of the Site drainage plan, and the limited amount of pervious surface onsite that will become impervious as a result of the project, implementation of the project will not substantially alter the drainage pattern of the Site in a manner that would result in substantial erosion or siltation onsite or offsite due to the construction of onsite drainage. In fact, part of the purpose for the proposed Project is to improve erosion and drainage management onsite. Any impacts under this issue are considered less than significant based on the project design. No mitigation is required.

c(ii). *Less Than Significant Impact* – Please refer to response X(c[i]) above. Impacts to the existing drainage pattern of the Site or area could occur if the development of the project results in an increased amount of flooding onsite or offsite. The proposed Project Site currently is adjacent to an existing reservoir and will include development of a level surface upon which to construct the new reservoir. The proposed Site design (refer to Figures 3 and 4) will ensure that Site conditions remain stable and surface flows do not result in erosion or sedimentation. All onsite flows will be directed toward the onsite drainage inlet or to the drainage channel via drain pipes, gutters or other means. The proposed Project will require the implementation of an Erosion and Sediment Control Plan that would be submitted to Los Angeles County, and implementation of hazardous material best management practices, which will ensure that drainage is managed in accordance with Los Angeles County standards. This drainage trajectory will prevent any on- and off-site flooding; based on the project drainage plans, no offsite flooding is anticipated, particularly because a purpose of the proposed Project is to improve the flow of on- and off-site drainage at the Site. Therefore, implementation of the project will not substantially increase the rate or amount of surface runoff resulting in flooding onsite or offsite, and any impacts under this issue are considered less than significant. No mitigation is required.

c(iii). *Less Than Significant Impact* – Please refer to response X(c[i]) and X(c[ii]) above. The proposed Project will not substantially create or contribute runoff water that would exceed the capacity of

existing or planned stormwater capacity, or provide substantial additional sources of polluted water. The proposed Project will require the implementation of the Erosion and Sediment Control Plan that would be submitted to Los Angeles County as well as hazardous material BMPs which will ensure that discharge of polluted material does not occur or is remediated in the event of an accidental spill. However, in most cases onsite surface flows will be directed toward the onsite drainage inlet or to the drainage channel via drain pipes, gutters or other means. Therefore, given that the proposed Project includes drainage improvements and drainage management, the proposed Project will have a less than significant potential to 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. No mitigation is required.

c(iv). *No Impact* – According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel for the proposed Project, the proposed Project is located on map 06037C1670F (Figure X-1), and within Zone D, which is considered an area of Undetermined flood hazard. Therefore, the Site is not located in a 100-year flood hazard area. Figure X-1 illustrates that the Site is not located within a 100-Year floodplain. Furthermore, the proposed Project includes drainage improvements and drainage management through installing mechanisms by which to control the drainage patterns onsite. Figure X-1 illustrates that the Site is not located within a 100-Year floodplain, and therefore development of the Site with the new reservoir would not impede or redirect flood flows as none would occur at the Site. No impacts under this issue are anticipated, and no mitigation is required.

d. *Less Than Significant With Mitigation Incorporated* – As stated above under issue X(c[iv]), according to the FEMA FIRM panel for the proposed Project, the proposed Project is located on map 06037C1670F (Figure X-1), and within Zone D, which is considered an area of Undetermined flood hazard. Therefore, the Site is not located in a flood hazard area. The Site is not located near any large bodies of water, so impacts associated with seiche or tsunami are not anticipated to occur. Mudflow typically occurs on hillsides, and though the project is located on a hillside, the Site will be stabilized through the implementation of recommended measures that will be enforced through the Geotechnical Investigation required by MMs **GEO-1** and **GEO-4**, which would ensure hillside stability and would thus prevent a significant impact from occurring due to mudflow. Therefore, the development of the new reservoir would not risk release of pollutants due to project inundation. No impacts are anticipated to occur under this issue. No mitigation is required.

e. *Less Than Significant Impact* – The purpose of the proposed Project is to construct a second reservoir at the existing Plant No. 7 site to allow SGVWC to store a larger volume of water through the addition of a 0.60 MG storage tank, which will ultimately provide additional storage capacity to SGVWC's customers, including Río Hondo College. SGVWC has diverse mix of water supplies including utilization of locally-produced groundwater from 31 wells located in the Main San Gabriel Groundwater Basin and from 4 wells located in the Central Groundwater Basin.[3] The proposed second reservoir is located in the area overlying the Main San Gabriel Groundwater Basin. The Sustainable Groundwater Management Act (SGMA) "requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, that will be 2040. For the remaining high and medium priority basins, 2042 is the deadline."[4] Neither the Central Groundwater Basin nor the Main San Gabriel Groundwater Basin are considered high or medium priority. The proposed Project would ensure that SGVWC has proper storage for Río Hondo College. Because the proposed Project is a water storage project, it is anticipated that with conservative construction practices (outlined under Hazards and Hazardous Materials above, and above in this Subchapter), the proposed Project would have a less than significant potential to conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

[3] https://www.sgvwater.com/water-quality-supply/water-sources/
[4] https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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?	☐	☐	☒	☐

SUBSTANTIATION

a. *Less Than Significant Impact* – The proposed new reservoir with associated Site improvements will be constructed on land that is adjacent to an existing reservoir that is designated for Public and Semi-Public (P), with a Zoning Classification of Heavy Agriculture (A-2-5). Essential infrastructure improvements, such as water storage reservoirs, can be constructed within any Land Use designation. The uses surrounding the project are generally associated with the College, the Puente Hills Landfill, or the Rose Hills Memorial Park and Mortuary with identical land uses and zoning classifications to that which underlie the proposed Project. Given that the proposed new reservoir would be developed within a site already containing an existing reservoir, the proposed Project would not physically divide an established community, and as such, impacts under this issue are considered less than significant and no mitigation is required.

b. *Less Than Significant Impact* – Please refer to the discussion under issue XI(a) above. As previously stated, the Site is Zoning Classification is Heavy Agriculture (A-2-5), and the Land Use Designations of the Site are Public and Semi-Public (P). In general, water production facilities are zone independent because they are needed to support all types of development. The area immediately surrounding the Site is generally residential in nature. The area next to the Site currently contains one reservoir. The addition of a second reservoir at this location will not result in a conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the proposed Project (including, but not limited to the general plan or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. There is no specific plan or local coastal program that would apply to the Site. Any impacts are considered less than significant. No mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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?	☐	☐	☒	☐

SUBSTANTIATION

a&b. *Less Than Significant Impact* – The proposed Project is located in unincorporated North Whittier. The uses surrounding the proposed Project are generally associated with the Río Hondo College, the Puente Hills Landfill, or the Rose Hills Memorial Park and Mortuary with identical land uses and zoning classifications to that which underlie the proposed Project. According to the Mineral Resources map prepared for the Los Angeles County General (Figure XII-1), no known mines or mineral resources are known to occur on the Site, though there are oil and gas resources in the vicinity of the Site. As no current mining operations exist at the Site or have been identified by Los Angeles County, implementation of the proposed Project will not result in in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. No mitigation is required.

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

SUBSTANTIATION

Background

Noise is generally described as unwanted sound. The proposed Project will include the development of a reservoir with associated water system connections and Site improvements. The Site is located adjacent to Río Hondo College in unincorporated North Whittier, within the La Puente Hills. Although not strictly a sensitive use because it is not occupied 24 hours a day, the distance to the closest Río Hondo College building is almost 1,500 feet from the Site.

The unit of sound pressure ratio to the faintest sound detectable to a person with normal hearing is called a decibel (dB). Sound or noise can vary in intensity by over one million times within the range of human hearing. A logarithmic loudness scale, similar to the Richter scale for earthquake magnitude, is therefore used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all sound frequencies within the entire spectrum. Noise levels at maximum human sensitivity from around 500 to 2,000 cycles per second are factored more heavily into sound descriptions in a process called “A-weighting,” written as “dBA.”

Leq is a time-averaged sound level; a single-number value that expresses the time-varying sound level for the specified period as though it were a constant sound level with the same total sound energy as the time-varying level. Its unit is the decibel (dB). The most common averaging period for Leq is hourly.

Because community receptors are more sensitive to unwanted noise intrusion during more sensitive evening and nighttime hours, state law requires that an artificial dBA increment be added to quiet time noise levels. The State of California has established guidelines for acceptable community noise levels that are based on the Community Noise Equivalent Level (CNEL) rating scale (a 24-hour integrated noise measurement scale). The guidelines rank noise land use compatibility in terms of "normally acceptable," "conditionally acceptable," and "clearly unacceptable" noise levels for various land use types. The State Guidelines, Land Use Compatibility for Community Noise Exposure, single-family homes are "normally acceptable" in exterior noise environments up to 60 dB CNEL and "conditionally acceptable" up to 70 dB CNEL based on this scale. Multiple family residential uses are "normally acceptable" up to 65 dB CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries and churches are "normally acceptable" up to 70 dB CNEL, as are office buildings and business, commercial and professional uses with some structural noise attenuation.

Noise Ordinance Standards

For stationary noise sources located proximate to residential uses, Los Angeles County has adopted a detailed Noise Control Ordinance, which is codified in Chapter 12.08, Noise Control, of Title 12, Environmental Protection, of the Los Angeles County Code. Noise from one land use crossing the property line of an adjacent property is regulated by Section 12.08.390 of the Los Angeles County Code. These standards are expressed in terms of a mean (50th percentile) noise level, which is the noise level allowed for up to 30 minutes in any hour. Some short-term noise levels may exceed the 50th percentile standard, up to a maximum of 20 dB above the allowable mean. The Los Angeles County Noise Control Ordinance allowable exterior noise levels for various land uses are shown in Table XIII-1. A mean noise level of 50 dB L_{50} (50th percentile, or "L_{50}") by day and 45 dB L_{50} for residential areas at night is the standard applicable at the Site. However, when these noise levels are already exceeded by ambient noise levels, then the ambient level becomes the standard.

Table XIII-1
LOS ANGELES COUNTY NOISE CONTROL ORDINANCE STANDARDS

Noise Zone	Land Use (Receptor Property)	Time Intervals	Exterior Noise Level (dB)				
			1 (L_{50}) 30 Min/Hr	2 (L_{25}) 15 Min/Hr	3 ($L_{8.3}$) 35 Min/Hr	4 ($L_{1.7}$) 70 Min/Hr	5 (L_0) at no time
I	Noise-Sensitive Area	Anytime	45	50	55	60	65
II	Residential Properties	10:00 p.m. to 7:00 a.m. (nighttime)	45	50	55	60	65
		7:00 a.m. to 10:00 p.m. (daytime)	50	55	60	65	70
III	Commercial Properties	10:00 p.m. to 7:00 a.m. (nighttime)	55	60	65	70	75
		7:00 a.m. to 10:00 p.m. (daytime)	60	65	70	75	80
IV	Industrial Properties	Anytime	70	75	80	85	90

Source: Los Angeles County Noise Control Ordinance, Exterior Noise Standards, Chapter 12.08.390.

Notes:

1. **Los Angeles County Noise Standard No. 1, L_{50}**: Noise levels which may not be exceeded for a cumulative period of more than 30 minutes in any hour. If the ambient L_{50} exceeds the levels listed above, then the ambient L_{50} becomes the exterior noise level for Standard No. 1.
2. **Los Angeles County Noise Standard No. 2, L_{25}:** Noise levels which may not be exceeded for a cumulative period of more than 15 minutes in any hour. If the ambient L_{25} exceeds the levels listed above, then the ambient L_{25} becomes the exterior noise level for Standard No. 2.
3. **Los Angeles County Noise Standard No. 3, $L_{8.3}$:** Noise levels which may not be exceeded for a cumulative period of more than 5 minutes in any hour. If the ambient $L_{8.3}$ exceeds the levels listed above, then the ambient $L_{8.3}$ becomes the exterior noise level for Standard No. 3.
4. **Los Angeles County Noise Standard No. 4, $L_{1.7}$:** Noise levels which may not be exceeded for a cumulative period of more than 1 minute in any hour. If the ambient $L_{1.7}$ exceeds the levels listed above, then the ambient $L_{1.7}$ becomes the exterior noise level for Standard No. 4.
5. **Los Angeles County Noise Standard No. 5, L_0:** Noise levels which may not be exceeded for any period of time. If the ambient L_0 exceeds the levels listed above, then the ambient L_0 becomes the exterior noise level for Standard No. 5

Groundborne Vibration
Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities such as railroads or vibration-intensive stationary sources but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. Vibration displacement is the distance that a point on a surface moves away from its original static position. The instantaneous speed that a point on a surface moves is described as the velocity and the rate of change of the speed is described as the acceleration. Each of these descriptors can be used to correlate vibration to building damage, and acceptable equipment vibration levels.

During construction, the operation of construction equipment can cause groundborne vibration. This type of vibration is best measured in terms of velocity or acceleration. The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration amplitudes. The units for PPV velocity is normally inches per second (in/sec). PPV is defined as the maximum instantaneous peak of the vibration signal and is considered appropriate for evaluating potential building damage.

At Residential Structures.

a. Mobile Equipment. Maximum noise levels from non-scheduled, intermittent, and short-term operation (less than 10 days) of mobile equipment:

Table XIII-2
LOS ANGELES COUNTY NOISE CONTROL STANDARDS
FOR NON-SCHEDULED, INTERMITTENT, AND SHORT-TERM OPERATION OF MOBILE EQUIPMENT

	Single-family Residential (dBA)	Multi-family Residential (dBA)	Semi-residential/ Commercial (dBA)
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75	80	85
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays.	60	65	70

b. Stationary Equipment Maximum noise level for repetitively scheduled and relatively long-term operation (period of 10 days or more) of stationary equipment:

Table XIII-3
LOS ANGELES COUNTY NOISE CONTROL STANDARDS
FOR SCHEDULED AND LONG-TERM OPERATION OF STATIONARY EQUIPMENT

	Single-family Residential (dBA)	Multi-family Residential (dBA)	Semi-residential/ Commercial (dBA)
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60	65	70
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays.	50	55	60

Source: County Code: Chapter 12.08.440

Sensitive Receivers
Sensitive receivers or sensitive receptors are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas. Moderately noise- sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, out-patient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs.

Impact Analysis

a. *Less Than Significant With Mitigation Incorporated* – The proposed Project is located in an area designated for Public and Semi-Public (P), with a Zoning Classification of Heavy Agriculture (A-2-5). The nearest noise sensitive land use (sensitive receptors) is located to the south of the Site approximately 1,500 feet from the Site. The nearest moderately noise-sensitive land use—the Rose Hills Memorial Park and Mortuary—is located about 150 feet to the south of the Site. Background noise is anticipated to be within the Los Angeles County Municipal Code noise standard for industrial uses. The Site is currently vacant, and as such currently does not generate any noise.

Short Term Noise

Short-term construction noise impacts associated with the proposed Project will occur in phases as the Site is developed. The earth-moving sources are the noisiest type of equipment typically ranging from 82 to 85 dB at 50 feet from the source. Construction equipment generates noise that ranges between approximately 75 and 90 dBA at a distance of 50 feet. Refer to Table XIII-4, which shows construction equipment noise levels at 25, 50 and 100 feet from the noise source.

Table XIII-4
NOISE LEVELS OF CONSTRUCTION EQUIPMENT AT 25, 50 AND 100 FEET (in dBA Leq) FROM THE SOURCE

Equipment	Noise Levels at 25 feet	Noise Levels at 50 feet	Noise Levels at 100 feet
Earthmoving			
Front Loader	85	79	73
Backhoes	86	80	74
Dozers	86	80	74
Tractors	86	80	74
Scrapers	91	85	79
Trucks	91	85	79
Material Handling			
Concrete Mixer	91	85	79
Concrete Pump	88	82	76
Crane	89	83	77
Derrick	94	88	82
Stationary Sources			
Pumps	82	79	70
Generator	84	78	72
Compressors	87	81	75
Other			
Saws	84	78	72
Vibrators	82	76	70

Source: U.S. Environmental Protection Agency "Noise"

Short-term construction noise impacts are mitigated by required compliance with Los Angeles County's Noise Control Ordinance. Los Angeles County allows construction during the hours of 7 AM to 7 PM Monday through Friday. Due to the distance between the Site and nearby sensitive receptors, construction noise is unlikely to exceed noise standards at the nearest noise-sensitive land use. Construction noise impacts would comply with Los Angeles County's Noise Control Ordinance by limiting the hours of construction to the hours deemed acceptable by Los Angeles County. However,

to minimize noise impacts during the allowed hours of construction, the following mitigation measures shall be implemented:

NOI-1 ***All construction vehicles and fixed or mobile equipment shall be equipped with operating and maintained mufflers.***

NOI-2 ***All employees that will be exposed to noise levels greater than 75 dB over an 8-hour period shall be provided adequate hearing protection devices to ensure no hearing damage will result from construction activities.***

NOI-3 ***No construction activities shall occur during the hours of 7 PM through 7 AM, Monday through Friday; at no time shall construction activities occur on Saturdays, Sundays or holidays, unless a declared emergency exists.***

NOI-4 ***Equipment not in use for five minutes shall be shut off.***

NOI-5 ***Equipment shall be maintained and operated such that loads are secured from rattling or banging.***

NOI-6 ***Construction employees shall be trained in the proper operation and use of equipment consistent with these mitigation measures, including no unnecessary revving of equipment.***

NOI-7 ***SGVWC will require that all construction equipment be operated with mandated noise control equipment (mufflers or silencers). Enforcement will be accomplished by random field inspections by applicant personnel during construction activities.***

Long-Term Noise

The proposed Project will not cause any measurable permanent increase in ambient noise levels in the vicinity of the project above levels existing without the project, in particular because this project will construct a second reservoir at a location containing an existing reservoir. Reservoirs typically do not generate substantial noise because they do not require a motor to store or convey water. Operation of the new reservoir would not result in significant noise impacts and the structure would be in ground. The loudest project activity is generally associated with operation of electric water pumps within solidly enclosed pump stations. However, the proposed Project is located at an elevation that enables stored water to flow by gravity. Thus, the proposed Project would not result in any substantial new stationary noise sources adjacent to sensitive receptors, or any other noise sources when excavation activities are completed.

Conclusion

Therefore, with mitigation measures **NOI-1** through **NOI-7** the proposed Project would have a less than significant potential to result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of a project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b. *Less Than Significant Impact* – Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by vibration of room surfaces is called structure borne noises. Sources of groundborne vibrations include natural phenomena (e.g. earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g. explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous or transient. Vibration is often described in units of velocity (inches per second), and discussed in decibel (dB) units in order to compress the range of numbers required to describe vibration. Vibration impacts related to human development are

generally associated with activities such as train operations, construction, and heavy truck movements.

The Federal Transit Authority (FTA) Noise and Vibration Assessment[5] states that in contrast to airborne noise, ground-borne vibration is not a common environmental problem. Although the motion of the ground may be noticeable to people outside structures, without the effects associated with the shaking of a structure, the motion does not provoke the same adverse human reaction to people outside. Within structures, the effects of ground-borne vibration include noticeable movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The FTA Assessment further states that it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. However, some common sources of vibration are trains, trucks on rough roads, and construction activities, such as blasting, pile driving, and heavy earth-moving equipment. The FTA guidelines identify a level of 80 VdB for sensitive land uses. This threshold provides a basis for determining the relative significance of potential project related vibration impacts.

Due to the location and the lack of any sensitive receptors within a reasonable distance of the Site, the proposed Project will not expose people to generation of excessive groundborne vibration or groundborne noise levels. During construction, certain construction activities have some potential to create vibration, but due to the size of the Site and lack of sensitive receptors, any impacts are considered less than significant. Additionally, because the rubber tires and suspension systems of heavy trucks and other on-road vehicles provide vibration isolation and reduced noise, it is unusual for on-road vehicles to cause noticeable groundborne noise or vibration impact. Most problems with on-road vehicle-related noise and vibration can be directly related to a pothole, bump, expansion joint, or other discontinuity in the road surface. Smoothing a bump or filling a pothole will usually solve the problem. The proposed Project would be constructed with smooth new pavement throughout the proposed Project and would not result in significant groundborne noise or vibration impacts from vehicular traffic. Thus, any impacts under this issue are considered less than significant and no mitigation is required.

c. *No Impact* – The proposed Project is not located within an airport land use plan. The San Gabriel Valley Airport is located approximately 4.6 miles north of the proposed Project, and the Long Beach Airport is located approximately 13 miles south of the proposed Project. Given the large distance between the proposed Project and nearby airports, project implementation would not expose people residing or working in the project area to excessive noise levels. There are no private airstrips located within two miles of the Site. Therefore, there is no potential to expose people residing or working in the project area to excessive noise levels due to the project location. No impacts will occur as a result of project implementation. No mitigation is required.

[5] https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XIV. POPULATION AND HOUSING: Would the project:				
a) Induce substantial 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?	☐	☐	☐	☒

SUBSTANTIATION

a. *Less Than Significant Impact* – The type of use planned for the Site is not of a type that would induce substantial population growth in the area. No housing is proposed as part of the project. Though construction of a new 0.60-MG reservoir with associated water connections and Site improvements will require a temporary work force, this is short-term and with a maximum of about 20 employees onsite during construction, it will not induce population growth. Additionally, the number of employees needed to operate the new reservoir with water improvement facilities will not be increased; SGVWC employees will visit the Site on an as needed or planned maintenance basis, which may involve one or two employees per visit. Therefore, impacts under this issue are considered less than significant and no mitigation is required.

b. *No Impact* – The proposed Project will occur on a Site that currently contains an existing 0.75-MG reservoir; implementation of the project will require development of a level surface upon which the new reservoir will be constructed. No housing is proposed as part of the project. Therefore, implementation of the project as a whole—which consists of a reservoir and associated pipeline connections and Site improvements—will not displace any existing housing or displace a substantial number of people that would necessitate the construction of replacement housing elsewhere. No impacts will occur as a result of project implementation. No mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XV. PUBLIC SERVICES: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☐	☒

SUBSTANTIATION

a. *Less Than Significant Impact* – The proposed Project, located within unincorporated North Whittier, is currently served by the Los Angeles County Fire Department. The Los Angeles County Fire Department Station 90, Station 17, and Station 87 are each located within about 2 or 3 miles of the Site, and serve the Site. The proposed Project will not include the use or storage of highly flammable materials. The proposed Project will develop a new 0.60-MG water storage reservoir with associated water connections and Site improvements that could benefit fire protection services by providing necessary water storage to Río Hondo College required for fire suppression. The structure to be developed on Site—the new water storage reservoir—is not anticipated to present a fire hazard, though it is located within Very High and High Hazard Severity Zones, and therefore is located in an area with potential for wildfires. SGVWC will incorporate one or both of the following into the design and construction specs for the Project to minimize the potential for the reservoir itself to exacerbate wildfire risk: a fire hydrant would be incorporated into the Project design to provide greater fire protection and/or flame resistant paint would be utilized to coat the exterior of the reservoir. The reservoir will be made of block, steel, and concrete, which are materials that are considered fire-resistant. Furthermore, the proposed Project would install a water storage reservoir that would enable greater water storage that could be utilized in instances requiring fire protection. Thus, with no greater potential for fire risk, no new or altered fire protection facilities will be required to serve this Project. Any impact to the existing fire protection system is considered less than significant. No additional mitigation is required.

b. *Less Than Significant Impact* – The Site is adjacent to the Río Hondo College, with no public access to the Site. The proposed Project will develop a new 0.60 MG water storage reservoir with associated water connections and Site improvements. The Los Angeles County Sheriff Department is located approximately 4 miles north/northeast of the Site at 11234 Valley Blvd #114, El Monte, CA 91731. The proposed reservoir would be adjacent to an existing reservoir. The proposed Project is not the kind of use that would likely attract criminal activity; any random trespass is unlikely given that the Site is not accessible to the public. As such, a less than significant potential exists for demand for police protection or expansion of police infrastructure. Due to the proposed Project's location within an existing facility, and the lack of new people associated with operation of the proposed facilities, implementation of the proposed Project would not substantially increase the demand for law enforcement services beyond that already existing at the Site.

c. *Less Than Significant Impact* – The proposed Project is located within the area served by Whittier Union High School District (WUHSD) and Whittier City School District (WCSD), additionally the proposed Project serves Río Hondo College. The proposed Project would not induce population growth within Los Angeles County, as it will neither construct housing, nor result in a growth in employment opportunities within the area, particularly given that existing SGVWC employees will be utilized as part of the new reservoir's operational scenario. Thus, the proposed Project will not generate an increase in elementary, middle, or high school population. Therefore, any impacts under this issue are considered less than significant. No mitigation is required.

d. *No Impact* – As stated in the preceding sections, the proposed Project is not anticipated to create a substantial increase in population because it will utilize existing SGVWC staff to visit the Site on a maintenance basis. The nearest parks are the Pico Rivera Bicentennial Park, and the large Whittier Narrows Natural Area are both located about one-half mile to the west/northwest of the Site. However, implementation of the proposed Project will not impact any current or planned park use, as it will be constructed on land containing and adjacent to existing water infrastructure. Thus, implementation of the proposed Project would not cause a substantial adverse physical impact to any parks within Los Angeles County or nearby cities. No impacts are anticipated, and no mitigation is required.

e. *No Impact* – Other public facilities include library and general municipal services. Since the proposed Project will not directly induce substantial population growth, it is not forecast that the use of such facilities will increase as a result of the proposed Project. As a result, the implementation of the proposed Project will not 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 public services to include other public facilities. Thus, no impacts are anticipated under this issue and no mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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?	☐	☐	☐	☒

SUBSTANTIATION

a. *No Impact* – As previously discussed in Section XIV, Population and Housing and Section XV, Public Services, this project will not contribute to an increase in the population beyond that already allowed or planned for by local and regional planning documents. Therefore, this project will not result in an increase in the demand for parks and other recreational facilities. It should be noted that the provision of water storage facilities (such as the proposed 0.60 MG reservoir) is generally considered a benefit to parks and recreational uses. No impacts are anticipated. No mitigation is required.

b. *No Impact* – The proposed Project consists of the construction of a 0.60 MG reservoir adjacent to SGVWC's existing reservoir at the Plant No. 7 site. This new reservoir will provide necessary water storage to Río Hondo College. The proposed Project will not include any recreational facilities, nor will it require the construction of new recreational facilities or expansion of new recreational facilities because the proposed Project is not anticipated to substantially induce any population growth. The use of the Site as the location for the second reservoir is not forecast to require a substantial short- or long-term labor force. As a result, no recreational facilities—existing or new—are required to serve the project, thus no impacts are anticipated under this issue. No mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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?	☐	☒	☐	☐

SUBSTANTIATION

a. *Less Than Significant With Mitigation Incorporated* – The proposed Project does not propose any new public roads. The operation of the proposed Project has no potential to conflict with alternative transportation plans, policies or programs. The proposed Project operations in the long term will not generate significant additional traffic and no new public roads or alterations to any existing public roads will result. The proposed new reservoir will be constructed entirely within the Site, and will therefore not impact or otherwise decrease performance or safety of public transit, bicycle, or pedestrian facilities once the reservoir is constructed. However, during construction, there is a potential to conflict with Río Hondo College's internal circulation plan as a result of the addition of construction traffic on Río Hondo College's roadways. While this impact is temporary—only for the 12 month duration of construction—implementation of the proposed Project would require implementation of a traffic management plan to ensure that Site access and Río Hondo College circulation would not be adversely impacted. Thus, the proposed Project shall implement the following mitigation measure to ensure that the circulation within Río Hondo College is not adversely impacted by the proposed Project's construction traffic:

TRAN-1 ***The construction contractor will provide adequate traffic management resources, as determined by Río Hondo College. Río Hondo College shall require a construction traffic management plan that complies with the Work Area Traffic Control Handbook, or other applicable standard, to provide adequate traffic control and safety during construction. The traffic management plan shall be prepared and approved by Río Hondo College prior to initiation of construction. At a minimum this plan shall include how to minimize the amount of time spent on construction activities; how to minimize disruption of vehicle and alternative modes of transport traffic at all times, but particularly during periods of high traffic volumes as directed by Río Hondo College; how to maintain safe traffic flow on local streets affected by construction at all times, including through the use of adequate signage, protective devices, flag persons or police assistance to ensure that traffic can flow adequately during construction; the identification of alternative routes that can meet the traffic flow requirements of a specific area, including communication (signs, webpages, etc.) with drivers and neighborhoods where construction activities will occur; designating parking and construction staging areas that would not conflict with Río Hondo College's operations nor prevent access along Observatory Road; adopting an emergency response and evacuation plan applicable to the duration of construction; and, at the end of each construction day the Site and adjacent***

roadways shall be prepared for continued utilization without any significant roadway hazards remaining.

Thus, with the implementation of the above mitigation measure, the proposed Project would not conflict with any adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. The proposed Project is not anticipated to result in a substantial number of trips such that levels of service or other State and local measures of performance would be violated. This is true particularly given that the proposed Project is located within Río Hondo College and is accessible via Observatory Road at Circle Drive in unincorporated North Whittier, within the La Puente Hills. Therefore, based on the availability of roadways and the developed area in which the proposed Project is located, the proposed Project has a less than significant potential to conflict with a program, plan, ordinance or policy addressing the circulation system with the implementation of MM **TRAN-1**, above.

b. *Less Than Significant Impact* – The proposed Project would develop a new 0.60 MG reservoir that will provide necessary water storage to Río Hondo College next to a site containing an existing reservoir that also currently provides water storage to Río Hondo College. Los Angeles County's threshold for vehicle miles travelled (VMT) involves screening criteria by which certain types of projects do not require further analysis.[6] The proposed 0.60 MG reservoir would not generate additional traffic to the Site beyond one or two a month on a maintenance basis by existing employees, furthermore, in the short term, construction of the proposed facilities will result in the generation of up to about 40-50 additional roundtrips per day on the adjacent roadways by construction personnel and trucks removing any excavated materials on Site. The VMT in these instances would likely average less than 50 miles round trip. The number of temporary truck trips will be minimized by using 15 cubic yard material haulers instead of smaller 10 cubic yard trucks to haul material onto and off of the Site. Additionally, the same trucks that haul material onto the Site would also carry material off of the Site. The total number of truck roundtrips per day is estimated to be 20-30 trips, plus about 20 employee roundtrips per day. Given the above, the proposed Project would, at no point during construction or operation, generate a net increase of 110 or more daily trips. Therefore, the proposed Project does not require further VMT analysis. As such, development of the proposed Project is not anticipated to result in significant impact related to vehicle miles travelled, and thus would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). Impacts under this issue are considered less than significant.

c. *Less Than Significant With Mitigation Incorporated* – The proposed Project will occur entirely within the limits of the Site as shown on the Site plan. Construction activities will not occur within any public roadways providing access to the Site; however, construction traffic has limited routes by which to access the Site due to the proposed Project's location within Río Hondo College, accessible only via a private access road—Observatory Road. Maintaining Site access through the whole of construction will be required, and thus will require implementation of a traffic management plan to ensure that Site access and Río Hondo College circulation would not be adversely impacted. The traffic management plan, implemented through the provision of MM **TRAN-1**, would include, but would not be limited to, the following construction traffic management practices and instruction: limiting construction trips to specific routes within Río Hondo College to avoid heavily used roadways and to avoid peak hour traffic within the campus as directed by Río Hondo College staff and/or Río Hondo College's management representative, adopting an emergency response and evacuation plan applicable to the duration of construction, designating parking and construction staging areas that would not conflict with Río Hondo College's operations nor prevent access along Observatory Road. Primary access to the Site will be provided along via Observatory Road at Circle Drive in unincorporated North Whittier, within the La Puente Hills above Río Hondo College. The proposed Site improvements will be designed such that the proposed Project would not increase hazards due to a geometric design feature or incompatible uses, or otherwise impact the private access road. Furthermore, access to the Site complies with Los Angeles County's design standards and Site access will remain the same

[6] https://pw.lacounty.gov/traffic/docs/Transportation-Impact-Analysis-Guidelines-July-2020-v1.1.pdf

once the reservoir is constructed. This would ensure that inadequate design features or incompatible uses do not occur. Additionally, the proposed Project would be required to comply with all applicable fire code and ordinance requirements for construction and access to the Site. Emergency response and evacuation procedures would be coordinated with Los Angeles County and with Río Hondo College through the provisions of MM **TRAN-1**, as well as the sheriff and fire departments. Therefore, the proposed Project will have a less than significant potential to substantially increase hazards due to a geometric design feature or incompatible uses with the implementation of mitigation.

d. *Less Than Significant With Mitigation Incorporated* – The Site includes access via a private access road that is accessible within Río Hondo College along Circle Drive. According to the Los Angeles County General Plan, no known Los Angeles County emergency access plans or emergency response or evacuation plans will be affected by this project in the short- or long-term. However, Río Hondo College has adopted an emergency response plan, by which the proposed Project must comply. Thus, MM **TRAN-1** would be required to address the potential for the proposed Project to result in any disruption of area circulation that might impair implementation of or physically interfere with Río Hondo College's adopted emergency response plan. Construction activities will not occur within the private roadways adjacent to the Site boundaries. Large trucks delivering equipment will be removing materials, as well as hauling materials off of the Site. These construction activities would be subject to the requirements of MM **TRAN-1**, which would ensure that conflicts with the flow of traffic within Río Hondo College would be minimized to a level of less than significant. Thus, with the implementation of MM **TRAN-1** the potential for any traffic disruption would be limited, and adequate emergency access during construction would be ensured. During operation of the proposed Project, only scheduled maintenance trips are anticipated to occur to the Site. As these trips currently occur in support of the existing reservoir, adequate access during operation is anticipated to be maintained. Impacts under this issue are considered less than significant with mitigation.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XVIII. TRIBAL CULTURAL RESOURCES: Would the project cause a substantial change in the significance of tribal cultural resources, 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 the 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 sub-division (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.	☐	☒	☐	☐

SUBSTANTIATION

A Tribal Resource is defined in the Public Resources Code section 21074 and includes the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are either of the following: included or determined to be eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources as defined in subdivision (k) of Section 5020.1;
- 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purpose of this paragraph, the lead agency shall consider the significance of the resources to a California American tribe;
- A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape;
- A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "non-unique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal resource if it conforms with the criteria of subdivision (a).

a&b. *Less Than Significant With Mitigation Incorporated* – No California Native American tribe has submitted a letter to the Río Hondo College requesting consultation pursuant to AB 52 as of July 2022. However, in an effort to ensure that Río Hondo College is communicative with tribes in the area, Río Hondo College has contacted the Gabrieleño/Tongva San Gabriel Band of Mission Indians and the Gabrieleño Band of Mission Indians – Kizh Nation. Río Hondo College has had an informal conversation with the Gabrieleño/Tongva San Gabriel Band of Mission Indians regarding the Project and will send this IS/MND to the Gabrieleño/Tongva San Gabriel Band of Mission Indians and to the Gabrieleño Band of Mission Indians – Kizh Nation, who may be culturally affiliated with the proposed Project area. Furthermore, out of an abundance of caution, Río Hondo College will reach out—during the public review process—to the Native American tribes listed above to solicit their input. Based on

the above, the following mitigation measure addresses the actions that shall be taken should discovery of cultural resources be encountered:

TCR-1 ***Río Hondo College shall notify the Gabriele o/Tongva San Gabriel Band of Mission Indians and the Gabriele o Band of Mission Indians – Kizh Nation should any cultural materials be discovered during construction activities. Should any cultural materials be discovered, Río Hondo College shall provide the tribes with an opportunity to monitor the remainder of earthmoving activities, though Río Hondo College shall not be obligated to fund the monitoring activities. Río Hondo College shall work with the tribes to determine a mutually agreeable path forward for monitoring during the remainder of any earthmoving activities associated with the Project.***

Given the minimal area of disturbance required in order to develop the proposed Project, MM **CUL-1** will ensure proper handling of buried cultural materials should any be discovered during any earth-moving operations associated with the proposed Project. As such, with the implementation of MM **CUL-1**, and MM **TCR-1** above, which will enable communication between the Gabriele o/Tongva San Gabriel Band of Mission Indians and the Gabriele o Band of Mission Indians – Kizh Nation and Río Hondo College, the proposed Project has a less than significant potential to cause a substantial change in the significance of tribal cultural resources, 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 either **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, Río Hondo College shall consider the significance of the resource to a California Native American tribe.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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 stormwater 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?	☐	☒	☐	☐

SUBSTANTIATION

a. Water

Less Than Significant Impact – The proposed Project will construct new water facilities—a new 0.60 MG water storage reservoir—to provide additional, necessary storage required at Río Hondo College in order to enable SGVWC to continue to provide adequate services to the Río Hondo College campus and to allow the existing water storage reservoir to be taken out of service for maintenance when required. The proposed Project will include the development of a 0.60 MG reservoir with associated connections to SGVWC's existing water infrastructure system serving Río Hondo College. The proposed Project will not require any additional water to operate, other than the water proposed to be stored in the reservoir, which will provide water storage for Río Hondo College. With no demand for water as a result of implementing the proposed Project, the development of the 0.60 MG water storage reservoir, connection to SGVWC's existing water system serving Río Hondo College, and Site improvements are not forecast to require or result in the construction of new water facilities or expansion of existing facilities in order to serve the proposed Project.

Wastewater

No Impact – New development in Los Angeles County is required to install wastewater infrastructure concurrent with project development. The proposed Project will not develop any housing or human-occupied structures. The only structure proposed at this time is the 0.60 MG water storage reservoir. Therefore, with no connections to the wastewater treatment plant and no generation of wastewater at the Site, Site improvements are not forecast to require or result in the construction of new wastewater facilities or expansion of existing facilities in order to serve the proposed Project.

Stormwater

Less Than Significant Impact – As stated under issue IX(e), implementation the proposed Project is not forecast to significantly alter the volume of surface/stormwater runoff that will be generated from the Site. The Site is located on a hillside, which means that much of the flow of water in the vicinity runs downhill from the Site. The proposed Project will include a drainage plan and will be constructed on a relatively flat area. All onsite flows will be directed toward the drain inlet onsite or to the drainage channel via drain pipes, gutters or other means. The proposed Project will require the implementation of an Erosion and Sediment Control Plan that would be submitted to Los Angeles County, and implementation of hazardous material best management practices, which will ensure that any potential discharge of polluted material does not occur or is remediated in the event of an accidental spill. Thus, the proposed Project will not require or result in the construction of new or expansion of existing stormwater drainage facilities because the Site plan includes a drainage plan and an Erosion and Sediment Control Plan that will be implemented with mitigation. Any impacts under this issue are considered less than significant. No mitigation is required.

Electric Power

No Impact – The proposed Project would not require the installation of electrical services or additional energy beyond that which the Site currently requires to operate. The proposed new reservoir tank operates by gravity and is fed by an existing off-site booster station. The existing booster will not be running more frequently to fill the new reservoir, with the exception of the energy required to facilitate the initial fill of water within the reservoir once in operation. In fact, the installation of a second reservoir at this location would result in less energy use by the booster station as the expanded water storage would result in a less frequent need to fill the reservoir tanks. Thus, the required energy to operate the project is minimal. Therefore, the proposed Project would not result in a significant environmental effect related to the relocation or construction of new or expanded electric power facilities. No impacts are anticipated.

Natural Gas

No Impact – The proposed Project would not require installation of natural gas. Therefore, the proposed Project would not result in a significant environmental effect related to the relocation or construction of new or expanded natural gas facilities. No impacts are anticipated.

Telecommunications

No Impact – The proposed Project would not require installation of wireless internet service or phone serve. Therefore, the proposed Project would not result in a significant environmental effect related to the relocation or construction of new or expanded telecommunication facilities. No impacts are anticipated.

b. *Less Than Significant Impact* – Please refer to the discussion under X(b) and XIX(a) above. The proposed Project will construct new water facilities—a new 0.60 MG water storage reservoir— to provide additional, necessary storage required at Río Hondo College in order to enable SGVWC to continue to provide adequate services to the Río Hondo College campus and to allow the existing water storage reservoir to be taken out of service for maintenance when required. The construction and operation of the new water storage reservoir will not create a greater demand for water at this Site than that which presently exists, as the new reservoir will connect to the existing water system providing service to Río Hondo College and store water for future use by Río Hondo College. Thus, implementation of the proposed Project will have sufficient water supplies available to serve the proposed Project from existing entitlements and resources. Any impacts under is issue is considered less than significant. No mitigation is required.

c. *No Impact* – Please refer to the discussion under issues XIX(a). The proposed 0.60 MG water storage reservoir will not generate any wastewater, as there are no connections to the wastewater treatment plant because no human occupied structures are proposed as part of this project. Therefore, implementation of the project will not create a demand for wastewater treatment services

that would impact the provider's ability to serve their existing commitments. No impacts are anticipated under this issue, and no mitigation is required.

d&e. *Less Than Significant With Mitigation Incorporated* – The proposed Project is not anticipated to generate a large amount of waste as a result of construction or operation of the new 0.60 MG reservoir. Any construction and demolition (C&D) waste will be recycled to the maximum extent feasible and any residual materials will be delivered to one of several C D disposal sites in the area surrounding the Site. Many of these C&D materials can be reused or recycled, thus prolonging the supply of natural resources and potentially saving money in the process.

In accordance with CALGreen Code 5.408.4, 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing must be reused or recycled. As this is a mandatory requirement, no mitigation is required to ensure compliance by SGVWC for this proposed Project.

While some of the existing concrete and asphalt may be removed, demolition is not anticipated to be required as part of the proposed Project, construction waste reduction/diversion would be the focus of recycling/reuse. Because of increased construction recycling efforts resulting from CalGreen and other regulations, opportunities for construction recycling are becoming easier to find, as evidenced by the number of facilities listed on the Construction and Demolition Debris Recycling Facilities list for Los Angeles County.[7] These facilities accept materials such as: appliances, cardboard, metals, wood, asphalt, concrete, soil, block rock, brick, carpet and padding, concrete with rebar, drywall, gravel, rock, roof tile, and tile.

The facilities that accept C&D materials, combined with the landfills in the surrounding area, have adequate capacity to serve the proposed Project. Solid waste will be disposed of in accordance with existing regulations at an existing licensed landfill. The solid waste will be disposed of in accordance with existing regulations at an existing licensed landfill—such as the Savage Canyon Landfill, which has a maximum daily permitted throughput of 3,350 tons per day, and a remaining capacity of 9,510,833 cubic yards (CY), located within 5 miles of the Site at 13919 East Penn Street Whittier, CA 90602.[8] This landfill permits thousands of tons of waste per day, which is beyond what the expected amount of waste would be generated by the proposed facilities during construction of the proposed Project. Furthermore, the proposed Project is not anticipated to generate a substantial amount of operational waste as the proposed Project will only be visited on an as needed maintenance basis in the future. Additionally, should the proposed Project require import or export of soil to accommodate developing a flat surface upon which to install the reservoir, all excavated soil would be hauled offsite by truck to an appropriately permitted solid waste facility. The daily amount of soil to be disposed per day would not exceed the maximum permitted throughput for each waste type (i.e., non-hazardous and hazardous). It is estimated that 15 CY trucks will be utilized to transport and export off site. For planning purposes, it is assumed that daily truck trips will be limited to 50 trucks per day and that a maximum of 75 miles per trip will occur. As such, the proposed Project would comply with all federal, State, and local statues related to solid waste disposal.

Any hazardous materials collected on the Site during either construction or operation of the project will be transported and disposed of by a permitted and licensed hazardous materials service provider. Therefore, the proposed Project is expected to comply with all regulations related to solid waste under federal, state, and local statutes. To further reduce potential impacts to solid waste facilities due to the large scale of the materials that may require disposal or recycling, the following mitigation measure will be implemented:

UTIL-1 The contract with demolition and construction contractors shall include the requirement that all materials that can be recycled shall be salvaged and recycled. This includes, but is not limited to, wood, metals, concrete, road

[7] https://pw.lacounty.gov/epd/CD/cd_attachments/Recycling_Facilities.pdf
[8] https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/3494?siteID=1399

base, and asphalt. The contractor shall submit a recycling plan to SGVWC for review and approval prior to the start of demolition/construction activities to accomplish this objective.

Therefore, with the above mitigation measure, the proposed Project is expected to comply with all regulations related to solid waste under federal, state, and local statutes and be served by a landfill(s) with sufficient permitted capacity to accommodate the project's solid waste disposal needs. No further mitigation is necessary.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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 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?	☐	☒	☐	☐

SUBSTANTIATION

a. *Less Than Significant With Mitigation Incorporated* – The proposed Project is located within Very High and High Fire Hazard Severity Zones in a State Responsibility Area (SRA), shown on Figure XX-1. The proposed Project is located on the outskirts and partially within an area of very high and high fire hazard severity, as much of the Río Hondo College is not located within a wildfire hazard zone. Please review the discussion of wildfire under Subchapter IX, Hazards and Hazardous Materials. The Site is located in a somewhat developed area with little native vegetation surrounding the Site immediately to the west and south as a result of the adjacent Río Hondo College facilities and the Rose Hills Memorial Park and Mortuary facilities. Additionally, to the north and east is the Puente Hills Landfill, further limiting the potential for wildfire in the general vicinity of the Site. However, the Site itself is located in an area with vegetation that was dominated by sugar bush (*Malosma laurna*), lemonade sumac (*Rhus integrifolia*), and lilac (*Ceanothus sp.*). This vegetation is very dense where it occurs on the Site. According to the CAL FIRE Fire Hazard Severity Zone Viewer Map (Figure XX-1), the proposed Project is located within Very High and High Hazard Severity Zones in a SRA. The proposed Project does not include the use of flammable or explosive materials. However, during construction, because the proposed Project is located within Very High and High Fire Hazard Severity Zones in a SRA, construction may exacerbate fire risk temporarily. As such, the proposed Project requires the implementation of MM **WF-1**, which would minimize fire risk during activities that would utilize electric equipment by requiring construction crews to carry fire prevention equipment during activities involving electrical equipment. Additionally, SGVWC will to incorporate

one or both of the following into the design and construction specs for the Project to minimize the potential for the reservoir itself to exacerbate wildfire risk: a fire hydrant would be incorporated into the proposed Project's design to provide greater fire protection and/or flame resistant paint would be utilized to coat the exterior of the reservoir. Based on the type of uses proposed, the proposed Project has a less than significant potential to expose people or property to wildland fires.

Please refer to the discussion under Subsection XVII(d), Transportation. Within the Site, the proposed facilities are not anticipated to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. According to the County General Plan, no known Los Angeles County emergency access plans or emergency response or evacuation plans will be affected by the proposed Project in the short- or long-term. However, Río Hondo College has adopted an emergency response plan, by which the proposed Project must comply. Thus, MM **TRAN-1** would be required to address the potential for the proposed Project to result in any disruption of area circulation that might impair implementation of or physically interfere with Río Hondo College's adopted emergency response plan. Ingress and egress of maintenance trucks and construction vehicles would come from Circle Drive and/or South Drive within Río Hondo College, or as otherwise directed by Río Hondo College directed truck/construction route. The Site is located on an access road with restricted access, and nearby roadways within Río Hondo College are accessible to students, staff, and visitors of Río Hondo College. The new reservoir would be developed in such a way that emergency response would have access in the area around the new reservoir, should access be required. Furthermore, construction activities would be subject to the requirements of MM **TRAN-1**, which would ensure that conflicts with the flow of traffic within Río Hondo College would be minimized to a level of less than significant. Therefore, the proposed Project will not substantially impair an adopted emergency response plan or emergency evacuation plan. Impacts under this issue are considered less than significant and no mitigation is required.

b. *Less Than Significant Impact* – The proposed Project includes the development of a new water storage reservoir next to a site in which an existing water storage reservoir is located. The proposed Project does not propose any human occupancy structures or other structures that will place people on the Site for long periods of time or pose a significant threat to people or property from wildfire risk. The Site is located adjacent to a hillside and therefore has a potential to be exposed to wildfire, particularly given the vegetation surrounding the Site, as there is not a significant amount of development located at this location. Because the proposed Project would develop a water storage reservoir next to a site containing an existing water storage reservoir, and because the provision of water storage is considered a benefit to the prevention of the spreading of wildfire in high risk areas, it is not anticipated that development at this Site would expose occupants to pollutant concentrations from a wildfire. Therefore, given that the proposed Project does not contain any human occupancy structures, it is not anticipated that the project would exacerbate fire risks thereby exposing project occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire. Impacts under this issue are considered less than significant and no mitigation is required.

c. *Less Than Significant With Mitigation Incorporated* – The proposed Project is a water storage reservoir construction project next to a site containing an existing reservoir. The Site contains vegetation that is very dense where it occurs on the Site, which could exacerbate fire risk during construction at this Site located within Very High and High Hazard Severity Zones in a SRA. The proposed Project does not include any new uses, such as power lines, that would have a potential to result in random fire risk under accidental circumstances (such as a downed wire, etc.). However, during construction, because the proposed Project is located within Very High and High Hazard Severity Zones in a SRA, construction may exacerbate fire risk temporarily. As such, the proposed Project requires the following mitigation measure, which would minimize fire risk during activities that would utilize electric equipment by requiring construction crews to carry fire prevention equipment during activities involving electrical equipment.

WF-1 ***During site clearing within the Site when any electrical construction equipment is in use, the construction crew shall have fire prevention equipment (such as fire extinguishers, emergency sand bags, etc.) accessible at all times to put out any accidental fires that could occur from the use of electrical construction/maintenance equipment.***

The proposed Project would not result in any ongoing impacts to the environment that would exacerbate fire risk as the proposed Project would be designed in accordance with fire department recommendations and to Los Angeles County design standards. However, SGVWC will incorporate one or both of the following into the design and construction specs for the proposed Project to minimize the potential for the reservoir itself to exacerbate wildfire risk: a fire hydrant would be incorporated into the proposed Project design to provide greater fire protection and/or flame resistant paint would be utilized to coat the exterior of the reservoir. Therefore, with the implementation of MM **WF-1** above, the proposed Project would not have a significant potential to exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

d. *Less Than Significant With Mitigation Incorporated* – The proposed Project would be installed on a Site that would not require significant soil import or export to ensure that the reservoir is installed on a flat surface. The design of the Site (Figures 3 and 4) would ensure that future drainage conditions direct flows away from the reservoir. The development of the reservoir at this Site will provide new drainage management to collect any sheet flow and convey it safely through the Site. The proposed Project would construct recommended design measures, which would minimize downslope landslides as a result of post-fire slope instability. Furthermore, the proposed Project does not propose any habitable structures and thus the exposure of persons to such an event is minimal. As stated under the Hydrology Subchapter, flood risks at the Site are minimal, and therefore downslope flooding is not anticipated to occur as a result of post-fire slope instability or drainage changes. Additionally, with implementation of specific measures outlined in the geotechnical study (enforced by MMs **GEO-1** and **GEO-2**), the proposed Project would install recommended design measures, which would minimize downslope landslides as a result of post-fire slope instability. Based on the discussion above, with MMs **GEO-1** and **GEO-2**, the proposed Project would have a less than significant potential to 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.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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?	☐	☒	☐	☐

SUBSTANTIATION

The analysis in this IS/MND and the findings reached indicate that the proposed Project can be implemented without causing any new project specific or cumulatively considerable unavoidable significant adverse environmental impacts. Mitigation is required to control certain potential environmental impacts of the proposed Project to a less than significant impact level. The following findings are based on the detailed analysis contained within this IS/MND of all environmental topics and the implementation of the mitigation measures identified in the previous text and summarized following this section.

a. *Less Than Significant With Mitigation Incorporated* – The proposed Project has no potential to cause a significant impact on any biological or cultural resources. The proposed Project has been identified as having no potential to degrade the quality of the natural environment, substantially reduce 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, or reduce the number or restrict the range of a rare or endangered plant or animal. The proposed Project requires mitigation to prevent significant impacts to nesting birds and coastal California gnatcatcher from occurring as a result of implementation of the proposed Project. Based on the historic disturbance of the Site, and its current disturbed condition, the potential for impacting cultural resources is low. The Cultural Resources Report determined that no cultural resources of importance were found at the Site, so it is not anticipated that any resources could be affected by the proposed Project because no cultural resources exist. However, because it is not known what could be accidentally unearthed upon any excavation activities, contingency mitigation measures are provided to ensure that, in the unlikely event that any resources are found, they are protected from any potential impacts. Please see biological and cultural sections of this IS/MND.

b. *Less Than Significant With Mitigation Incorporated* – Based on the analysis in this IS/MND, the proposed Project has the potential to cause impacts that are individually or cumulatively considerable. There are no other projects in the vicinity to which this proposed Project would make a cumulatively considerable impact, furthermore the provision of water storage is generally viewed as a benefit to the community. The issues of Air Quality, Biology, Cultural Resources, Energy, Geology and Soils,

Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire require the implementation of mitigation measures to reduce impacts to a less than significant level and ensure that cumulative effects are not cumulatively considerable. All other environmental issues were found to have no significant impacts without implementation of mitigation. The potential cumulative environmental effects of implementing the proposed Project have been determined to be less than considerable and thus, less than significant impacts.

c. *Less Than Significant With Mitigation Incorporated* – The proposed Project includes activities that have a potential to cause direct substantial adverse effects on humans. The issues of Air Quality, Geology and Soils, Hazards and Hazardous Materials, Noise, and Wildfire require the implementation of mitigation measures to reduce human impacts to a less than significant level. All other environmental issues were found to have no significant impacts on humans without implementation of mitigation. The potential for direct human effects from implementing the proposed Project have been determined to be less than significant with mitigation.

Conclusion

This document evaluated all CEQA issues contained in this IS/MND Checklist form. The evaluation determined that either no impact or less than significant impacts would be associated with the issues of Agricultural and Forestry Resources, Greenhouse Gas Emissions, Land Use and Planning, Mineral Resources, Population/Housing, Public Services, and Recreation. The issues of Aesthetics, Air Quality, Biology, Cultural Resources, Energy, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Transportation, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire require the implementation of mitigation measures to reduce impacts to a less than significant level. The required mitigation has been proposed in this IS/MND to reduce impacts for these issues to a less than significant impact.

Based on the findings in this IS/MND, Río Hondo College proposes to adopt a Mitigated Negative Declaration for the San Gabriel Valley Water Company Plant No. 7 Project. A Notice of Intent to Adopt a Mitigated Negative Declaration (NOI) will be issued for this project by Río Hondo College. This Initial Study and NOI will be circulated for 30 days of public review and comment. At the end of the 30-day review period, a final IS/MND package will be prepared and it will be reviewed by Río Hondo College for possible adoption at a future public meeting of its Board of Trustees, the date for which has not yet been determined. If you or your agency comments on this IS/MND, you will be notified about the meeting date in accordance with the requirements in Section 21092.5 of CEQA..

_____

Note: Authority cited: Sections 21083 and 21083.05, Public Resources Code. Reference: Section 65088.4, Gov. Code; Sections 21080(c), 21080.1, 21080.3, 21083, 21083.05, 21083.3, 21093, 21094, 21095, and 21151, Public Resources Code; *Sundstrom v. County of Mendocino*,(1988) 202 Cal.App.3d 296; *Leonoff v. Monterey Board of Supervisors*, (1990) 222 Cal.App.3d 1337; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; San *Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

Revised 2019
Authority: Public Resources Code sections 21083 and 21083.09
Reference: Public Resources Code sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3/ 21084.2 and 21084.3

SUMMARY OF MITIGATION MEASURES

Aesthetics

AES-1 Where the removal of trees is required to develop the reservoir, SGVWC shall replace all trees removed at a 1:1 ratio.

Air Quality

AIR-1 Fugitive Dust Control. The following measures shall be incorporated into project plans and specifications for implementation during construction:

- Apply soil stabilizers to inactive areas.
- Prepare a high wind dust control plan and implement plan elements and terminate soil disturbance when winds exceed 25 mph.
- Stabilize previously disturbed areas if subsequent construction is delayed.
- Apply water to disturbed surfaces and haul roads 3 times/day.
- Replace ground cover in disturbed areas immediately upon the completion of the disturbance in that area.
- Reduce speeds on unpaved roads to less than 15 mph.
- Trenches shall be left exposed for as short a time as possible.
- Identify proper compaction for backfilled soils in construction specifications.

This measure shall be implemented during construction, and shall be included in the construction contract as a contract specification.

AIR-2 Exhaust Emissions Control. The following measures shall be incorporated into Project plans and specifications for implementation:

- Utilize off-road construction equipment that has met or exceeded the maker's recommendations for vehicle/equipment maintenance schedule.
- Contactors shall utilize Tier 4 or better heavy equipment.
- Enforce 5-minute idling limits for both on-road trucks and off-road equipment.

Biological Resources

BIO-1 The results of the coastal California gnatcatcher presence/absence survey determined that the species is absent from the Site. Construction shall commence prior to March 28, 2023, or a follow up presence/absence survey for the coastal California gnatcatcher shall be conducted in accordance with USFWS protocol for this species.

BIO-2 All Project activities on-site shall be conducted outside of the nesting bird season (generally, raptor nesting season is January 1 through September 15; and passerine bird nesting season is February 1 through September 1) to the maximum extent feasible. If Project activities begin outside of nesting season, a pre-construction survey shall be performed by a qualified biologist to verify the absence of nesting birds. A qualified biologist shall conduct the pre-activity survey within the Project footprint (including access routes) and a 300-foot buffer surrounding the Project area, no more than two hours prior to initiating Project activities.

If Project activities begin during the nesting bird season (generally, raptor nesting season is January 1 through September 15; and passerine bird nesting season is February 1 through September 1), nesting bird surveys shall be conducted by a qualified avian biologist no more than three (3) days prior to Project initiation. Preconstruction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests containing eggs or young are found during the preconstruction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked

on the ground. Nest buffers are species-specific and shall be at least 100 feet for passerines and 300 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Established buffers shall remain on Site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.

Cultural Resources

CUL-1 Should any cultural resources be encountered during construction of these facilities, earthmoving or grading activities in the immediate area of the finds shall be halted and an onsite inspection shall be performed immediately by a qualified archaeologist. Responsibility for making this determination shall be with SGVWC, in conjunction with Río Hondo College. The archaeological professional shall assess the find, determine its significance, and make recommendations for appropriate mitigation measures within the guidelines of the California Environmental Quality Act.

CUL-2 If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the Los Angeles County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5 and that code enforced for the duration of the Project.

Geology and Soils

GEO-1 SGVWC shall retain a qualified engineering geologist to investigate the Site proposed for water storage reservoirs. The recommendations of the engineering geologist relative to mitigating the potential for ground rupture, ground shaking, landslide, expansive soils and other geological constraints shall be incorporated in the design and construction of these facilities. Design of such facilities shall follow the following design performance criteria. Comprehensive geotechnical investigation shall be required prior to engineering and design development or structural and/or substantial rehabilitation of structures identified under Risk Class I & II, e.g., public facilities, as identified below:

Risk Class I & II, Structures Critically Needed after Disaster: Structures which are critically needed after a disaster include important utility centers, fire stations, police stations, emergency communication facilities, hospitals, and critical infrastructure elements such as bridges and overpasses, water storage reservoirs, and smaller dams.

Acceptable Damage: Minor non-structural; facility should remain operational and safe, or be suitable for quick restoration of service.

Risk Class III: High occupancy structures; uses are required after disasters, i.e., places of assembly such as schools and churches.

Acceptable Damage: Some impairment of function acceptable; structure needs to remain operational.

Risk Class IV, Ordinary Risk Tolerance: The vast majority of structures in urban areas; most commercial and industrial buildings, small hotels and apartment buildings, and single family residences.

Acceptable Damage: An "ordinary" degree of risk should be acceptable. The criteria envisioned by the Structural Engineers Association of California provide the best definition of the "ordinary" level of acceptable risk. These criteria require that structures be able to:

a. Resist minor earthquakes without damage;
b. Resist moderate earthquakes without structural damage, but with some non-structural damage; or
c. Resist major earthquakes, of the intensity or severity of the strongest experienced in California, without collapse, but with some structural, as well as non-structural damage.

Risk Class V, moderate to High Tolerance: Open space uses, such as farms, ranches and parks without high occupancy structures; warehouses with low intensity employment; and the storing of non-hazardous materials.

Acceptable Damage: Not applicable.

GEO-2 Based upon the preliminary geotechnical investigation (Appendix 4 of this document), all of the recommended seismic design parameters identified in Appendix 4 (beginning on Page 6) in addition to all of the geotechnical and geologic recommendations shall identified in Appendix 4 (beginning on Page 9) shall be implemented by SGVWC. Implementation of these specific measures will address all of the identified geotechnical constraints identified at the Site, including landslide and slope stability on future project-related structures.

GEO-3 Stored backfill material shall be covered with water resistant material during periods of heavy precipitation to reduce the potential for rainfall erosion of stored backfill material. Where covering is not possible, measures such as the use of straw bales or sand bags shall be used to capture and hold eroded material on the Site for future cleanup such that erosion does not occur.

GEO-4 All exposed, disturbed soil (trenches, stored backfill, etc.) shall be sprayed with water or soil binders twice a day, or more frequently if fugitive dust is observed migrating from the Site within which the 0.60 MG replacement reservoir with associated water improvements is being constructed.

GEO-5 Should any paleontological resources be encountered during construction of these facilities, earthmoving or grading activities in the immediate area of the finds shall be halted and an onsite inspection should be performed immediately by a qualified paleontologist. Responsibility for making this determination shall be with SGVWC's onsite inspector. The paleontological professional shall assess the find, determine its significance, and determine appropriate mitigation measures within the guidelines of the California Environmental Quality Act that shall be implemented to minimize any impacts to a paleontological resource.

Hazards and Hazardous Materials

HAZ-1 Prior to and during grading and construction, should an accidental release of a hazardous material occur, the following actions will be implemented: construction activities in the immediate area will be immediately stopped; appropriate regulatory agencies will be notified; immediate actions will be implemented to limit the volume and area impacted by the contaminant; the contaminated material, primarily soil, shall be collected and removed to a location where it can be treated or disposed of in accordance with the regulations in place at the time of the event; any transport of hazardous waste from the property shall be carried out by a registered hazardous waste transporter; and testing shall be conducted to verify that any residual concentrations of the accidentally released material are below the regulatory remediation goal at the time of the event. All of the above sampling or remediation activities related to the contamination will be conducted under the oversight of Los Angeles County Certified Unified Program Agency (CUPA) Site Mitigation Unit (SMU). All of the above actions shall be documented and made available to the appropriate regulatory agencies prior to closure (a determination of the regulatory agency that a Site has been remediated to a threshold that poses no hazard to humans) of the contaminated area.

Noise

NOI-1 All construction vehicles and fixed or mobile equipment shall be equipped with operating and maintained mufflers.

NOI-2 All employees that will be exposed to noise levels greater than 75 dB over an 8-hour period shall be provided adequate hearing protection devices to ensure no hearing damage will result from construction activities.

NOI-3 No construction activities shall occur during the hours of 7 PM through 7 AM, Monday through Friday; at no time shall construction activities occur on Saturdays, Sundays or holidays, unless a declared emergency exists.

NOI-4 Equipment not in use for five minutes shall be shut off.

NOI-5 Equipment shall be maintained and operated such that loads are secured from rattling or banging.

NOI-6 Construction employees shall be trained in the proper operation and use of equipment consistent with these mitigation measures, including no unnecessary revving of equipment.

NOI-7 SGVWC will require that all construction equipment be operated with mandated noise control equipment (mufflers or silencers). Enforcement will be accomplished by random field inspections by applicant personnel during construction activities.

Transportation

TRAN-1 The construction contractor will provide adequate traffic management resources, as determined by Río Hondo College. Río Hondo College shall require a construction traffic management plan that complies with the Work Area Traffic Control Handbook, or other applicable standard, to provide adequate traffic control and safety during construction. The traffic management plan shall be prepared and approved by Río Hondo College prior to initiation of construction. At a minimum this plan shall include how to minimize the amount of time spent on construction activities; how to minimize disruption of vehicle and alternative modes of transport traffic at all times, but particularly during periods of high traffic volumes as directed by Río Hondo College; how to maintain safe traffic flow on local streets affected by construction at all times, including through the use of adequate signage, protective devices, flag persons or police assistance to ensure that traffic can flow adequately during construction; the identification of alternative routes that can meet the traffic flow requirements of a specific area, including communication (signs, webpages, etc.) with drivers and neighborhoods where construction activities will occur; designating parking and construction staging areas that would not conflict with Río Hondo College's operations nor prevent access along Observatory Road; adopting an emergency response and evacuation plan applicable to the duration of construction; and, at the end of each construction day the Site and adjacent roadways shall be prepared for continued utilization without any significant roadway hazards remaining.

Tribal Cultural Resources

TCR-1 Río Hondo College shall notify the Gabriele o/Tongva San Gabriel Band of Mission Indians and the Gabriele o Band of Mission Indians – Kizh Nation should any cultural materials be discovered during construction activities. Should any cultural materials be discovered, Río Hondo College shall provide the tribes with an opportunity to monitor the remainder of earthmoving activities, though Río Hondo College shall not be obligated to fund the monitoring activities. Río Hondo College shall work with the tribes to determine a mutually agreeable path forward for monitoring during the remainder of any earthmoving activities associated with the Project.

Utilities and Service Systems

UTIL-1 The contract with demolition and construction contractors shall include the requirement that all materials that can be recycled shall be salvaged and recycled. This includes, but is not limited to, wood, metals, concrete, road base, and asphalt. The contractor shall submit a recycling plan to SGVWC for review and approval prior to the start of demolition/construction activities to accomplish this objective.

Wildfire

WF-1 During site clearing within the Site when any electrical construction equipment is in use, the construction crew shall have fire prevention equipment (such as fire extinguishers, emergency sand bags, etc.) accessible at all times to put out any accidental fires that could occur from the use of electrical construction/maintenance equipment.

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FIGURES

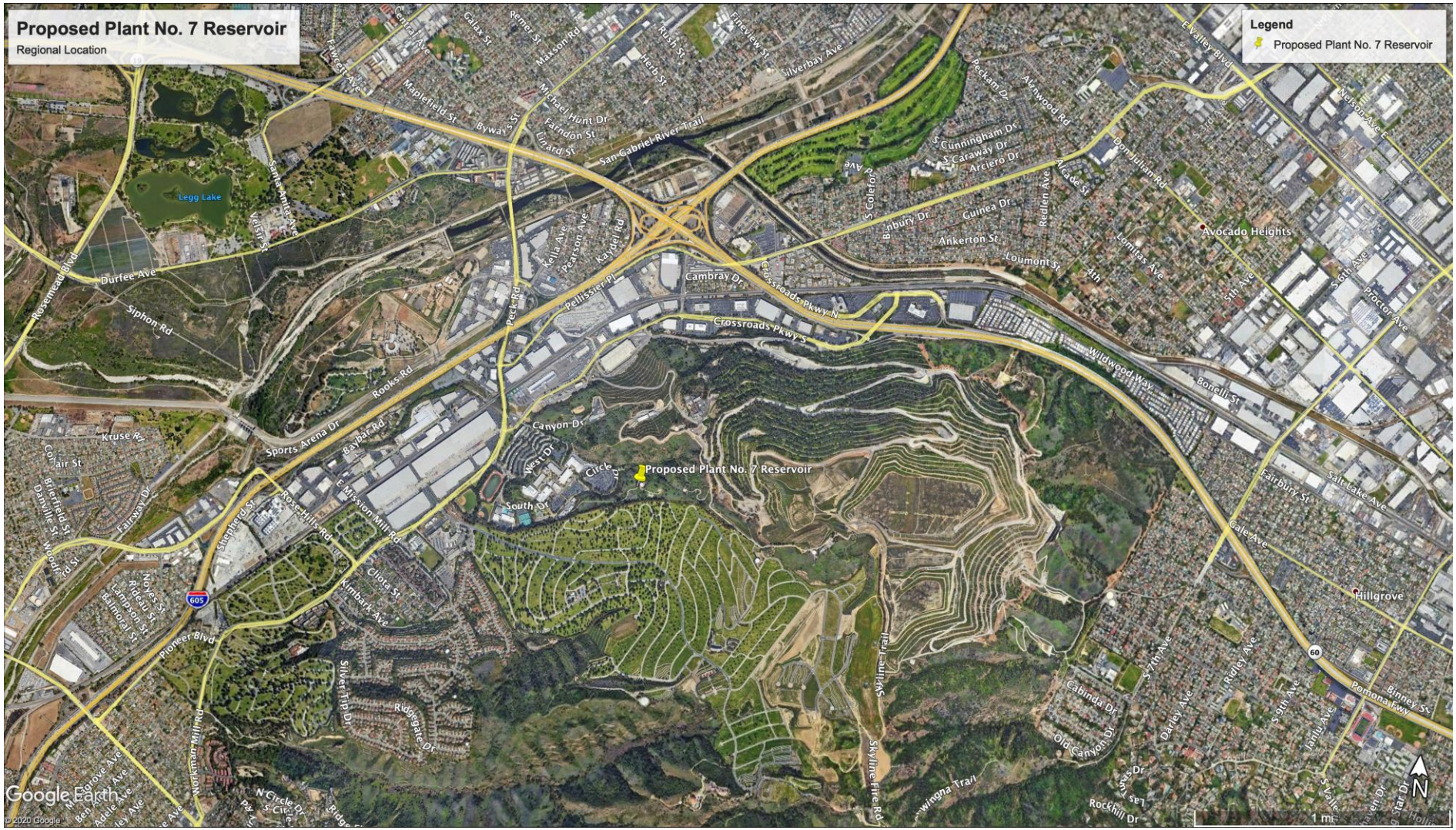


FIGURE 1

Tom Dodson & Associates
Environmental Consultants

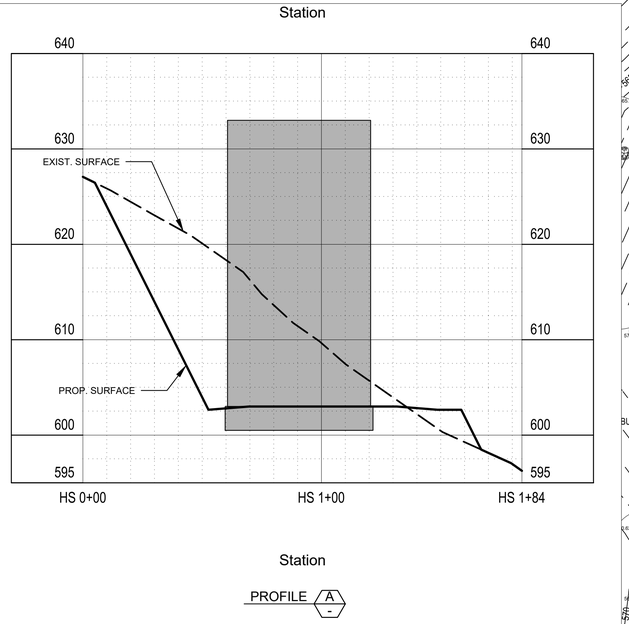
Regional Location

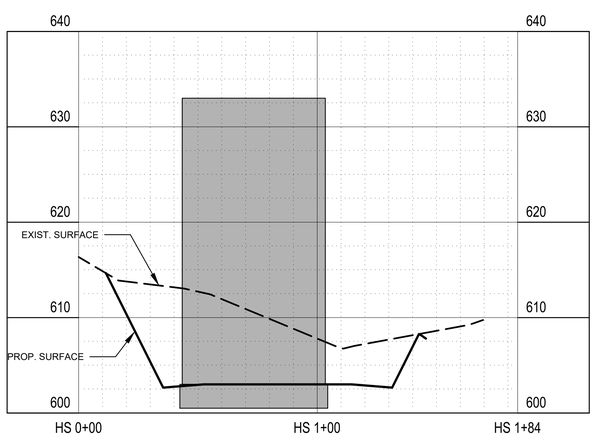


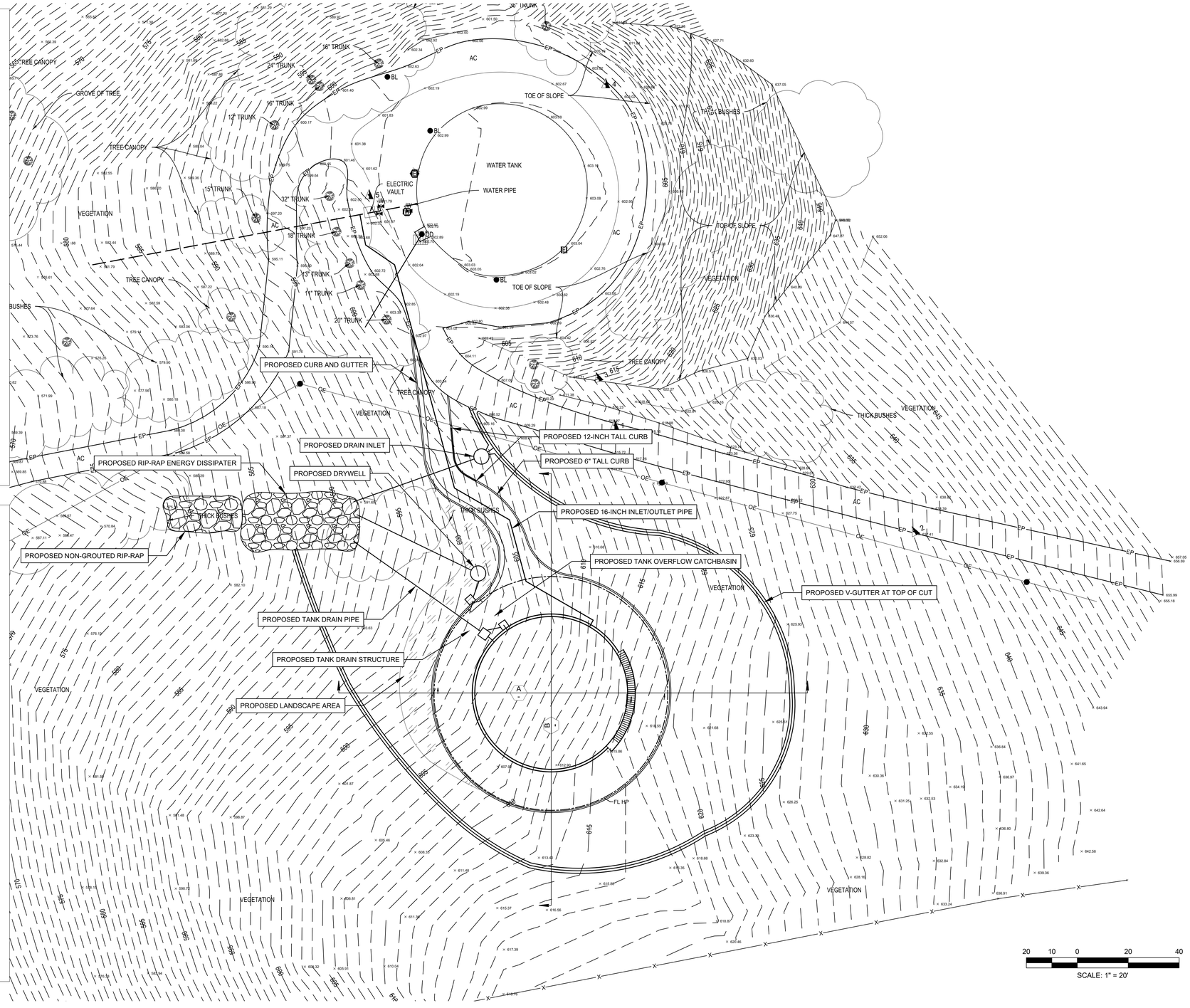
FIGURE 2

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Site Location







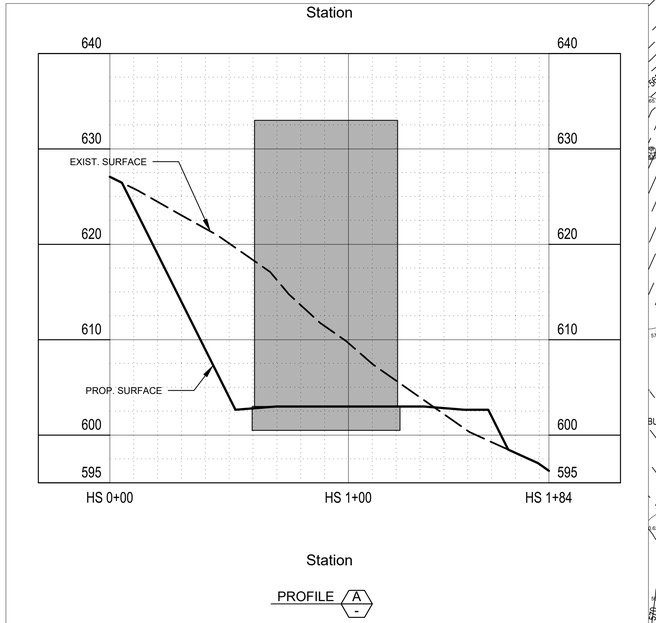
LINE LEGEND

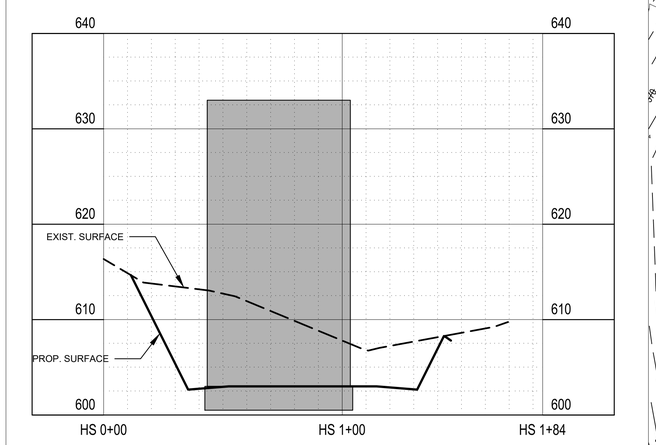
EP	EDGE OF PAVEMENT LINE
W	WATER LINE
	GRADE BREAK LINE
SD	STORM DRAIN LINE
OE	OVERHEAD ELECTRIC LINE

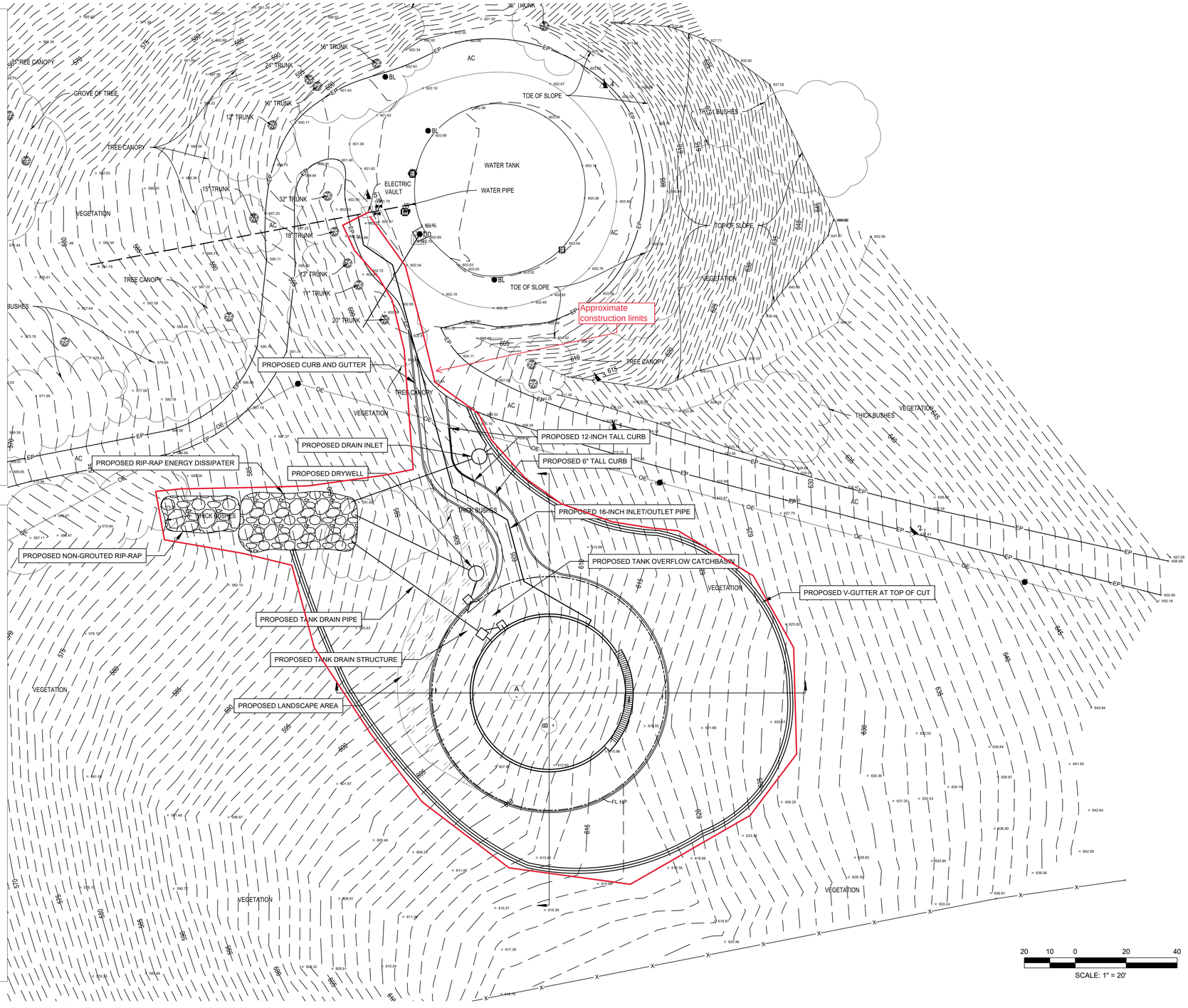
SEE SHEET 2 FOR SYMBOL LEGEND

PLANT No 7 CONCEPTUAL SITE PLAN

FIGURE 3







LINE LEGEND

- EP — EDGE OF PAVEMENT LINE
- W — WATER LINE
- GRADE BREAK LINE
- SD — STORM DRAIN LINE
- OE — OVERHEAD ELECTRIC LINE

SEE SHEET 2 FOR SYMBOL LEGEND

PLANT No 7 CONCEPTUAL SITE PLAN

FIGURE 4

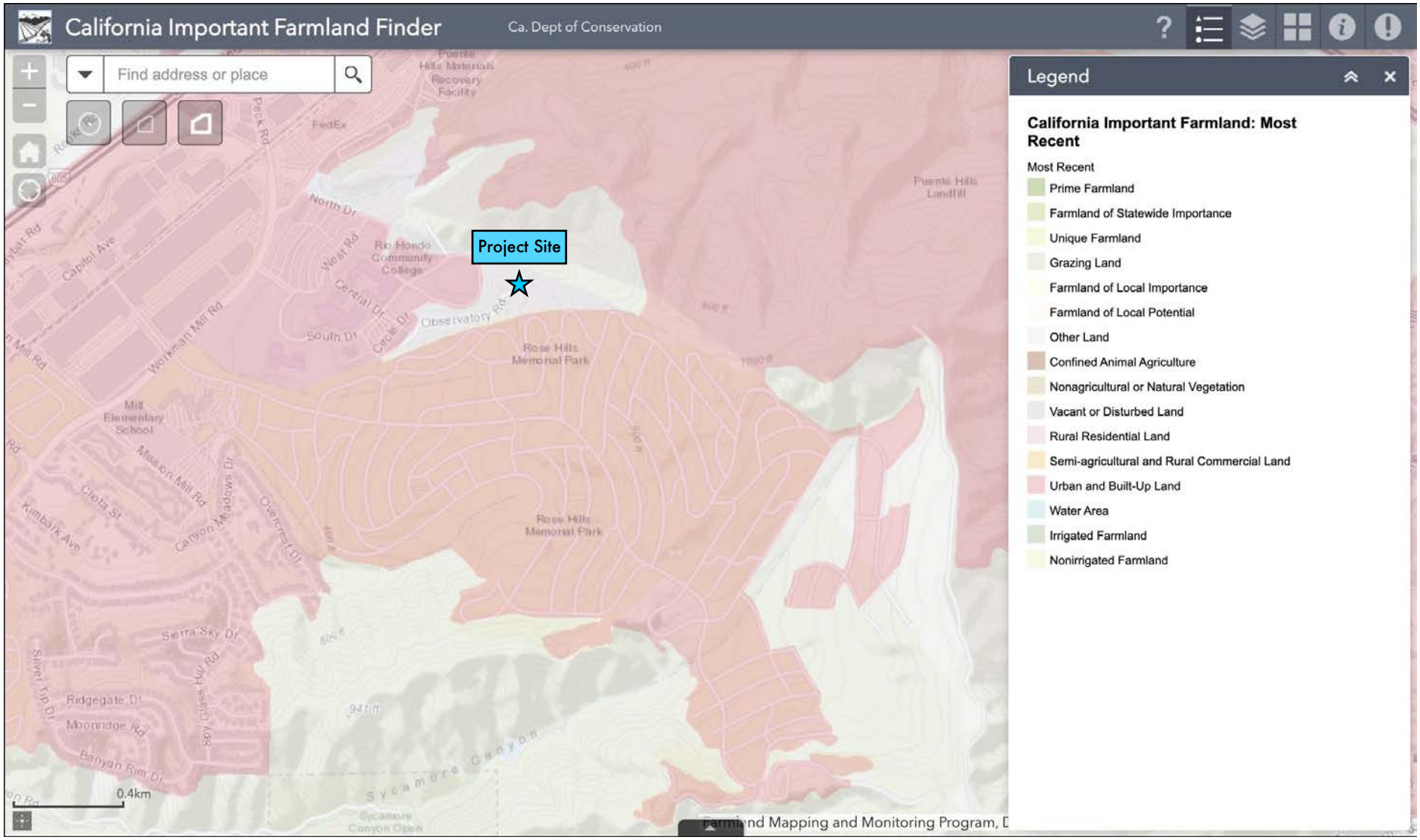


FIGURE II-1

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Farmland Map

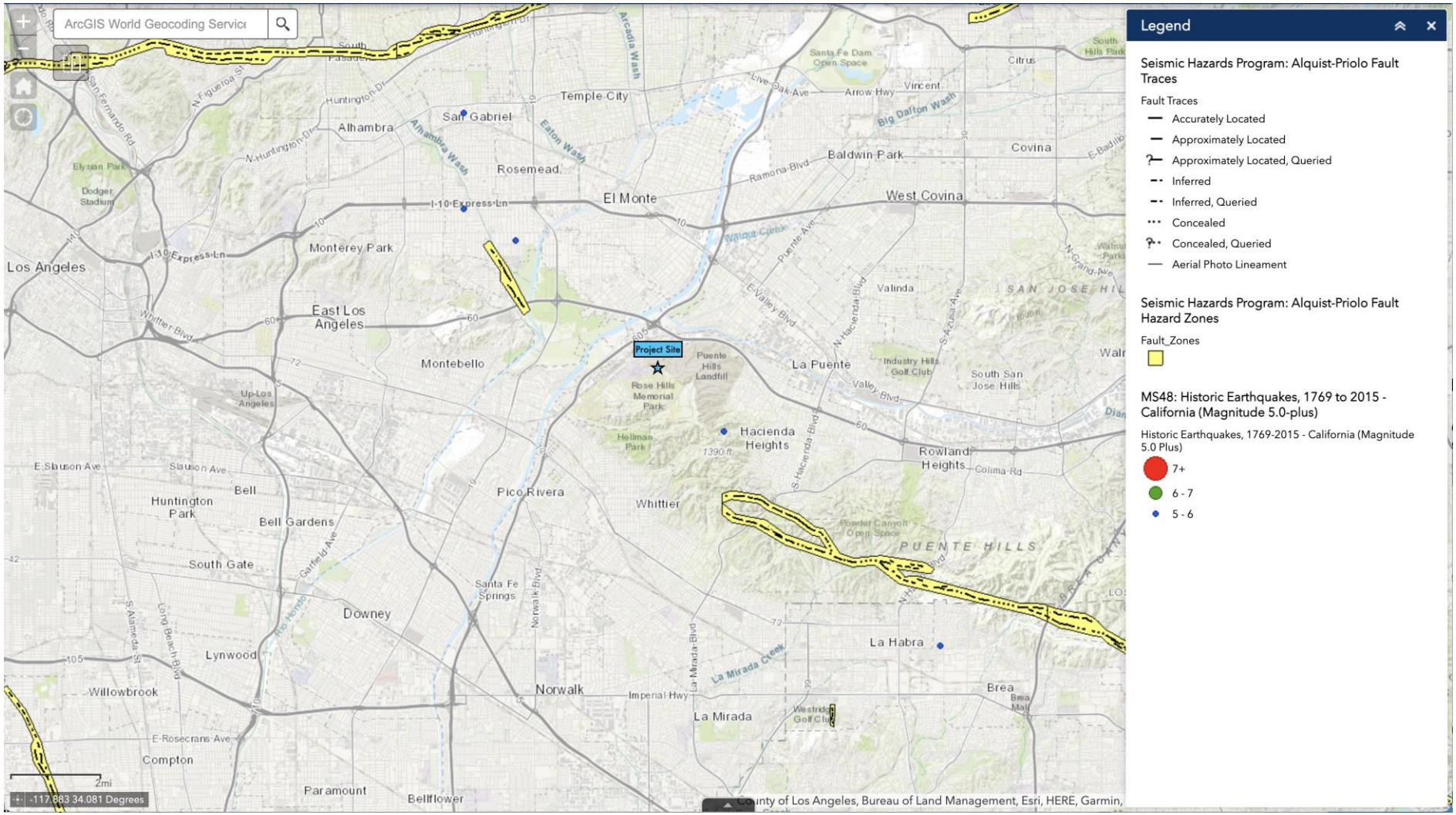


FIGURE VII-1

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Alquist-Priolo Fault Traces and Hazard Zones

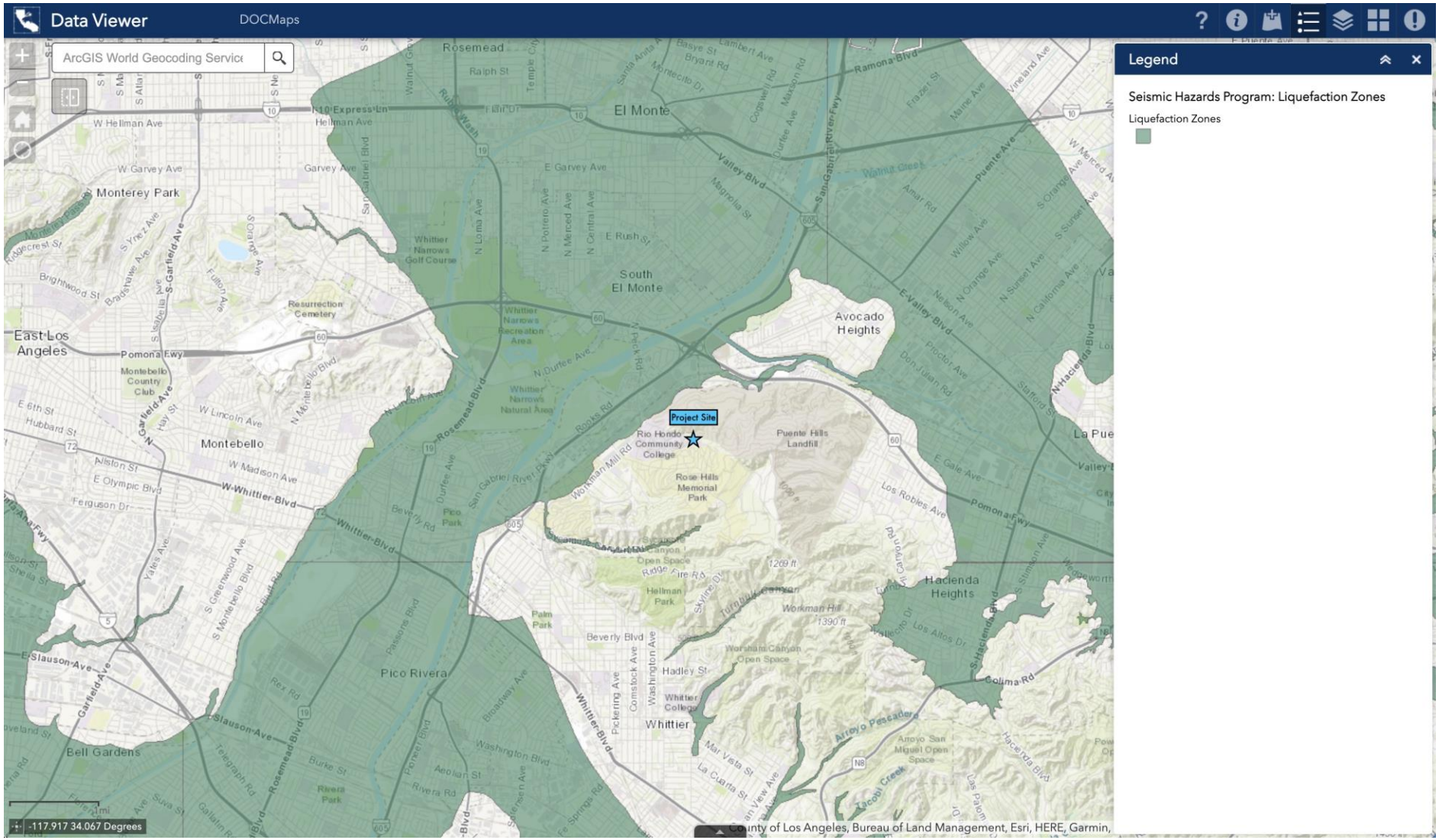


FIGURE VII-2

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Liquefaction Zones

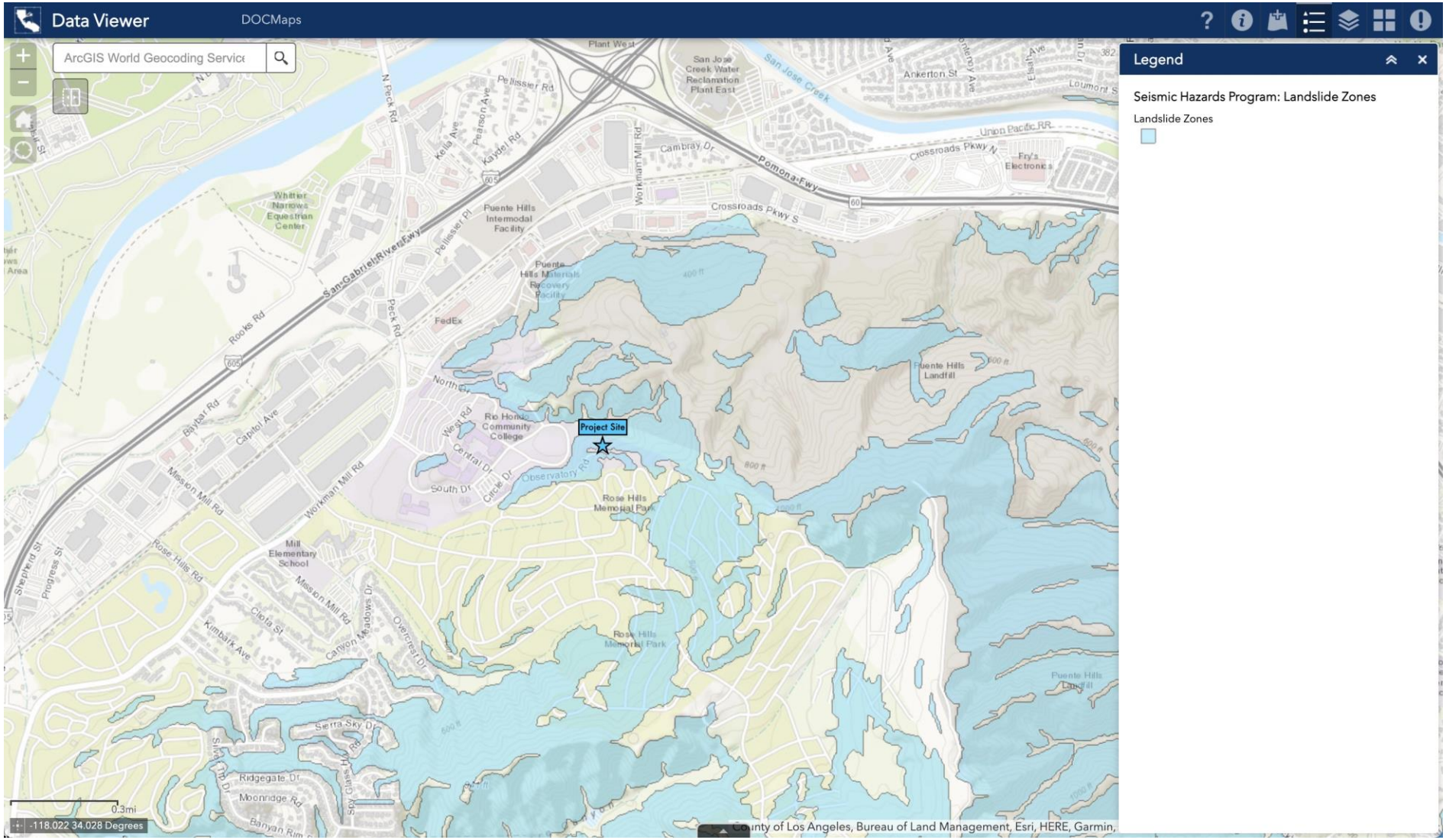


FIGURE VII-3

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Landslide Zones

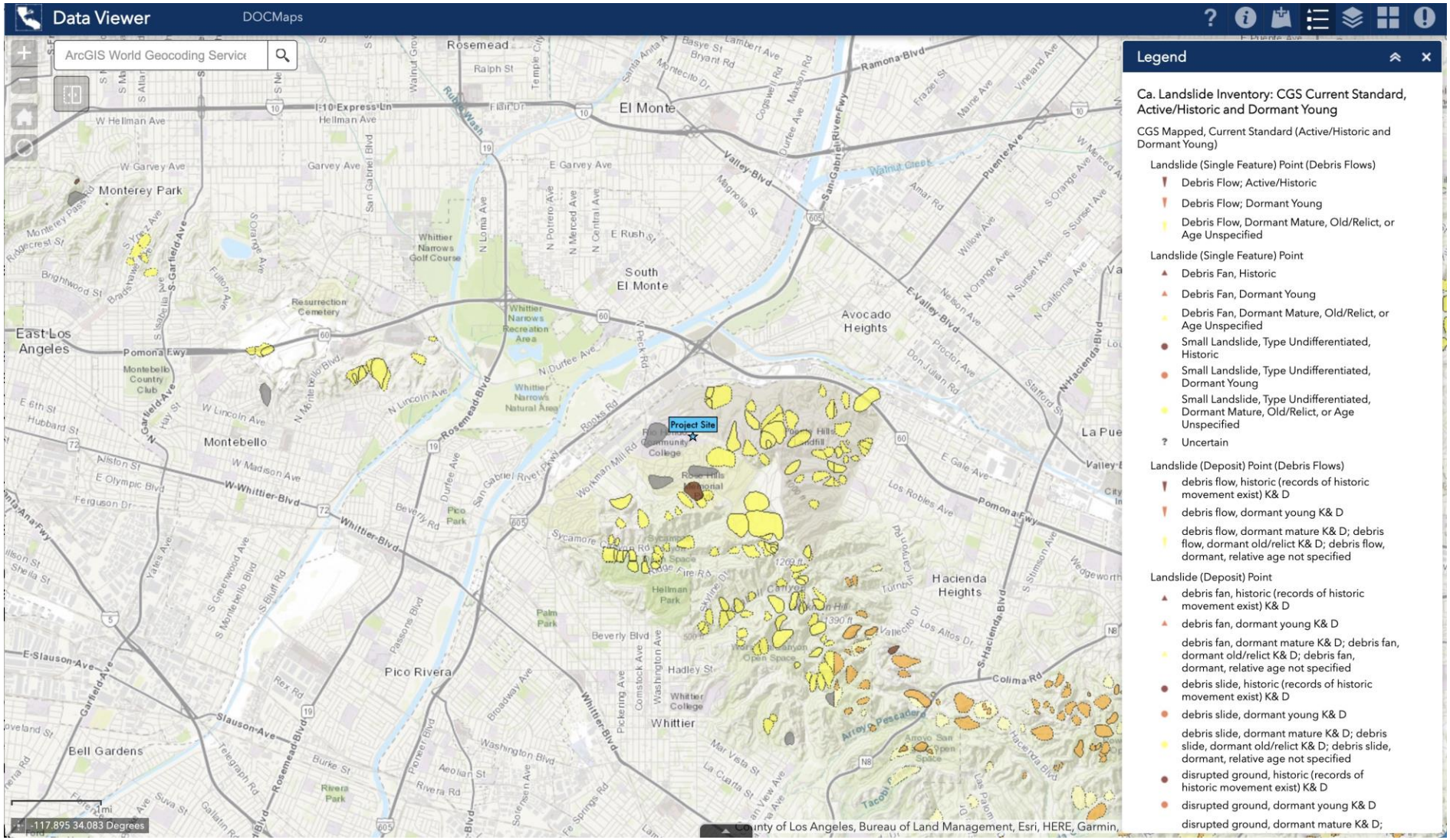


FIGURE VII-4

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California Landslide Inventory



FIGURE IX-1

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GeoTracker

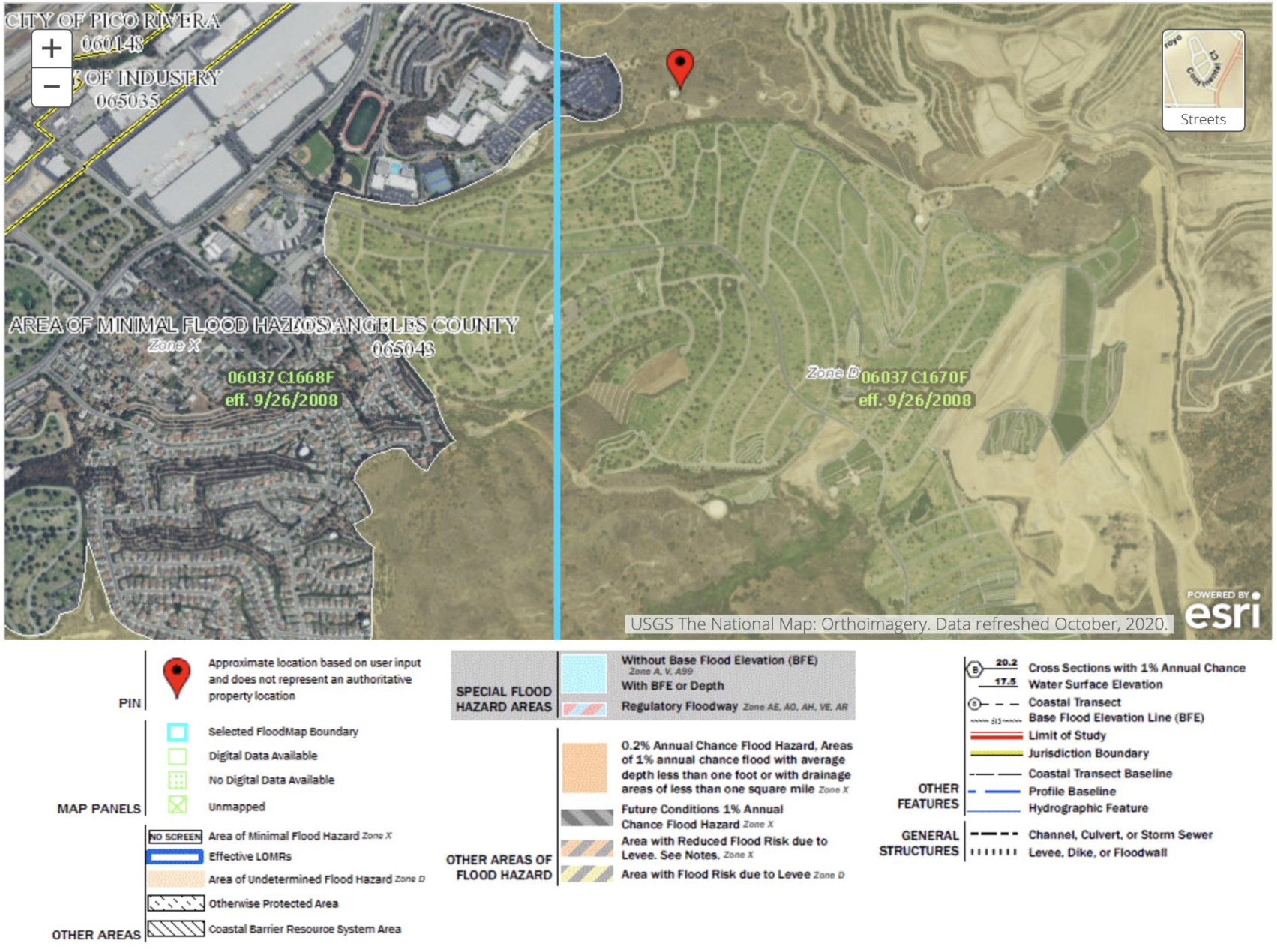


FIGURE X-1

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FEMA Map

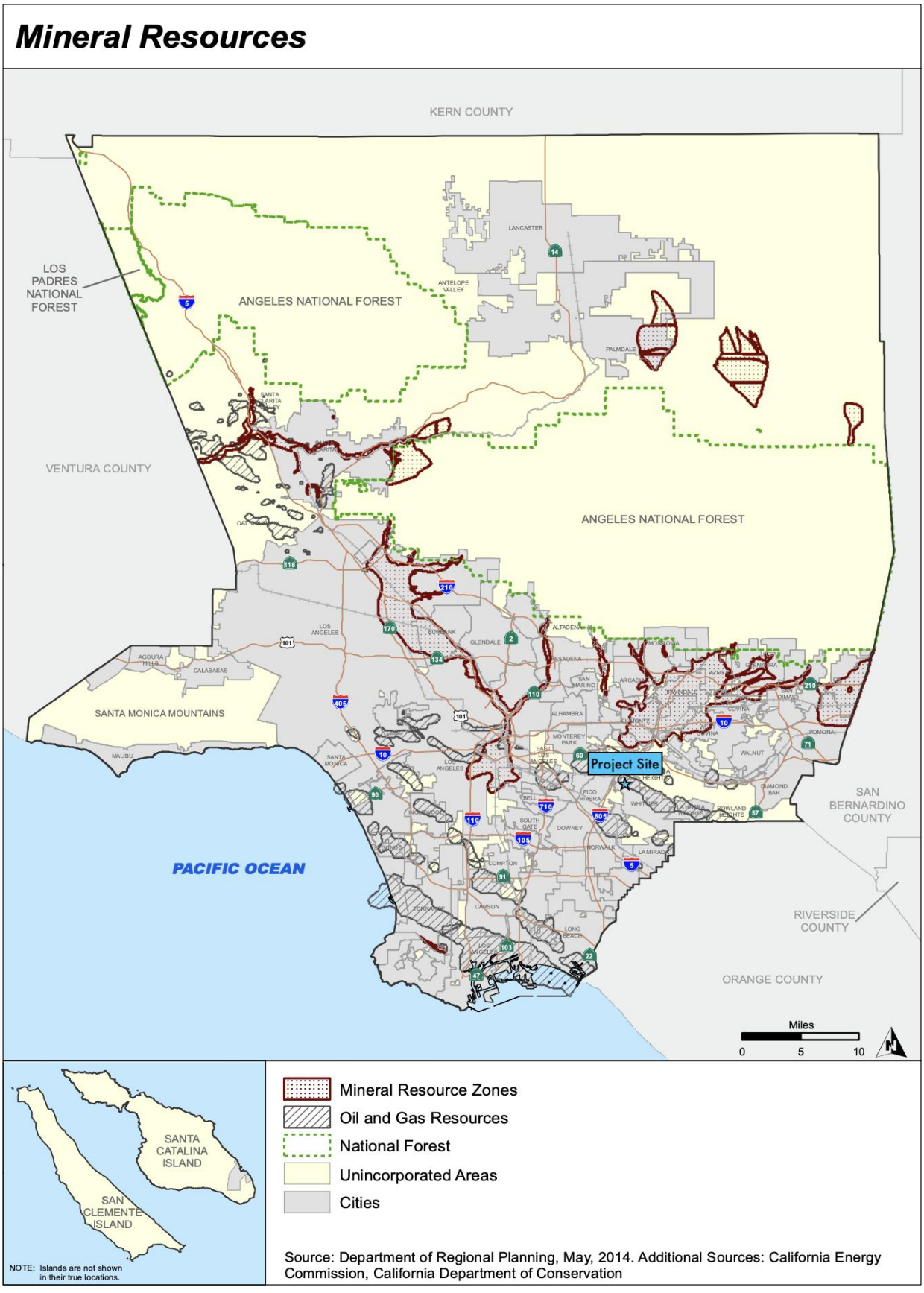


FIGURE XII-1

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Mineral Resources

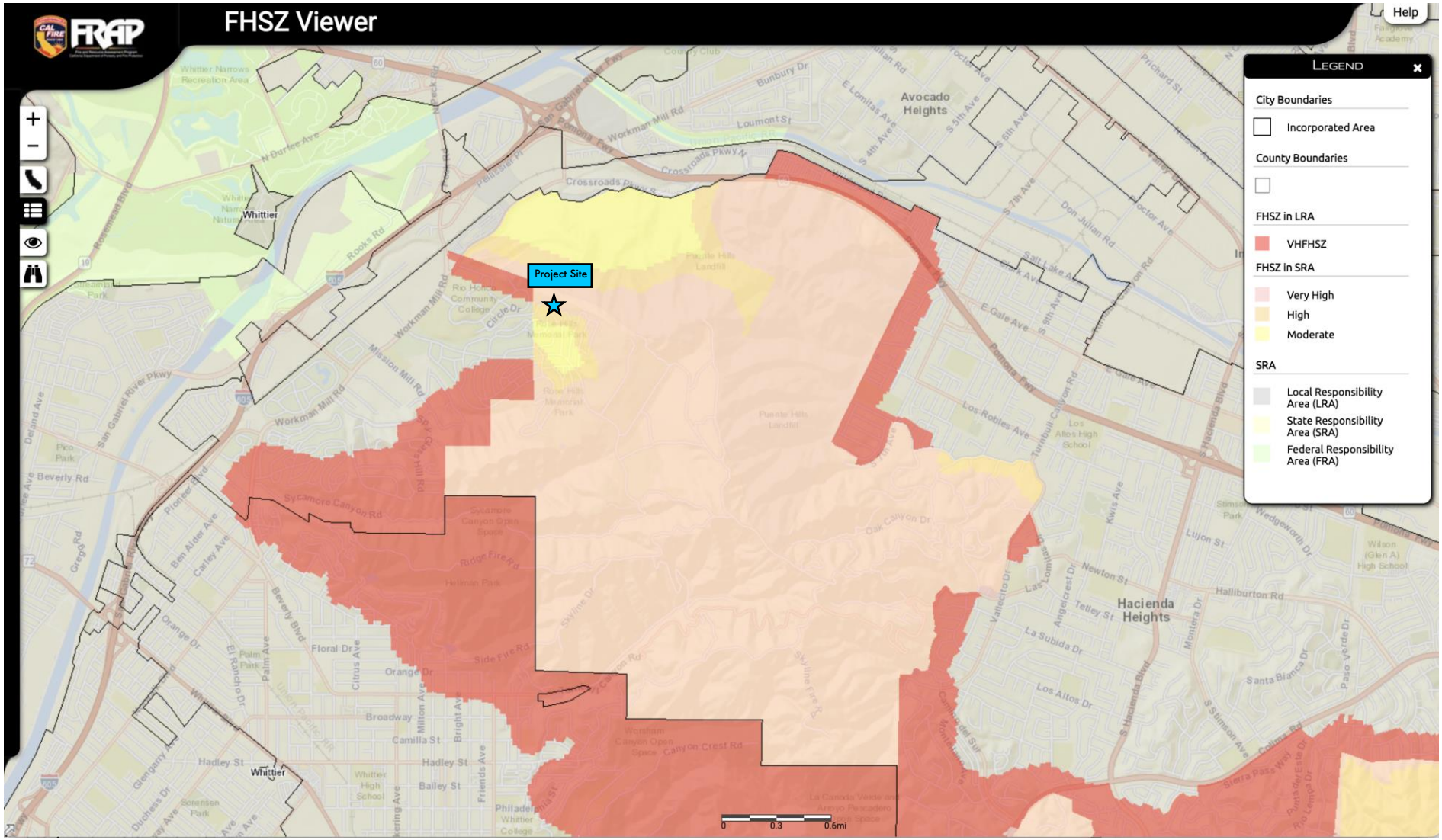


FIGURE XX-1

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Very High Fire Hazard Severity Zone in a State Responsible Area

APPENDIX 1

AIR QUALITY and GHG IMPACT ANALYSES

SGV-470
SAN GABRIEL VALLEY WATER COMPANY
PLANT No. 7 PROJECT

LOS ANGELES COUNTY, CALIFORNIA

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PO Box 2307
San Bernardino, CA 92406-2307

Date:

March 15, 2021

Project No.: P21-003 AQ

ATMOSPHERIC SETTING

The project site's climate, as with all Southern California, is dominated by the strength and position of the semi-permanent high pressure pattern over the Pacific Ocean near Hawaii. It creates cool summers, mild winters, and infrequent rainfall. It drives the cool daytime sea breeze, and it maintains comfortable humidity levels and ample sunshine after the frequent morning clouds dissipate. Unfortunately, the same atmospheric processes that create the desirable living climate combine to restrict the ability of the atmosphere to disperse the air pollution generated by the large population attracted in part by the desirable climate. Portions of the Los Angeles Basin therefore experience some of the worst air quality in the nation for certain pollutants.

Temperatures in the City of Whittier and Unincorporated North Whittier in Los Angeles County vicinity average 63 degrees annually. Daily and seasonal oscillations of temperature are small because of the moderating effects of the nearby oceanic thermal reservoir. Summer afternoons reach 90 degrees on average, and winter mornings drop to 40 degrees. In contrast to the steady temperature regime, rainfall is highly variable. Measurable precipitation occurs mainly from early November to mid-April, but total amounts are generally small. The Whittier area averages 15 inches of rain annually with January as the wettest month. Twenty-two days per year have measurable rain, with moderate to heavy rain (>0.50 inch in 24 hours) on seven days.

Winds in the project vicinity display several characteristic regimes. During the day, especially in summer, winds are from the southwest in the morning and from the northwest in the afternoon. Daytime wind speeds are 6 – 8 miles per hour on average. At night, especially in winter, the land becomes cooler than the ocean, and an off-shore wind of 2-4 miles per hour develops. One other important wind regime occurs when high pressure occurs over the western United States that creates hot, dry and gusty Santa Ana winds from the north and northeast across Unincorporated North Whittier.

The net effect of the wind pattern on air pollution is that any locally generated emissions will be carried seaward at night and toward western Riverside or San Bernardino Counties by day. Daytime ventilation is much more vigorous. Unless daytime winds rotate far into the northwest and bring air pollution from developed areas of the air basin into Unincorporated North Whittier, warm season air quality is better in the project vicinity than in inland valleys farther to the east. While winter mornings have strong stagnation potential because of light winds, automobiles have become sufficiently "clean" such that localized pollution "hot spots" have almost completely disappeared. Although there are still recurring violations of some clean air standards, the magnitude and frequency of those violations have diminished dramatically in the last 20-30 years in the project area.

In addition to winds that control the rate and direction of pollution dispersal, Southern California is notorious for strong temperature inversions that limit the vertical depth through which pollution can be mixed. In summer, coastal areas are characterized by a sharp discontinuity between the cool marine air at the surface and the warm, sinking air aloft within the high pressure cell over the ocean to the west. This marine/subsidence inversion allows for good local mixing, but acts like a giant lid over the basin. Air starting onshore at the beach is relatively clean, but becomes progressively more polluted as sources continue to add pollution from below without any dilution

from above. The project area is only moderately affected by the marine inversion such that the frequency of violations of smog standards is relatively low.

A second inversion type forms on clear, winter nights when cold air off the mountains sinks to the surface while the air aloft remains warm. This process forms radiation inversions. These inversions, in conjunction with calm winds, trap pollutants such as automobile exhaust near their source. During the long nocturnal drainage flow from land to sea, the exhaust pollutants continually accumulate within the shallow, cool layer of air near the ground. Some areas of Orange County thus may experience slightly elevated levels of carbon monoxide and nitrogen oxides because of this winter radiation inversion condition. However, the Whittier area is not substantially affected by limited nocturnal mixing effects (no violations of CO standards in approximately 10 years). Both types of inversions occur throughout the year to some extent, but the marine inversions are very dominant during the day in summer, and radiation inversions are much stronger on winter nights when nights are long and air is cool. The governing role of these inversions in atmospheric dispersion leads to a substantially different air quality environment in summer in the South Coast Air Basin than in winter.

AIR QUALITY SETTING

AMBIENT AIR QUALITY STANDARDS (AAQS)

In order to gauge the significance of the air quality impacts of the proposed project, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research has shown, however, that chronic exposure to ozone (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. The initial attainment deadline of 1977 was extended several times in air quality problem areas like Southern California. In 2003, the Environmental Protection Agency (EPA) adopted a rule, which extended and established a new attainment deadline for ozone for the year 2021. Because the State of California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table 1. Sources and health effects of various pollutants are shown in Table 2.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM-2.5"). New national AAQS were adopted in 1997 for these pollutants.

Planning and enforcement of the federal standards for PM-2.5 and for ozone (8-hour) were challenged by trucking and manufacturing organizations. In a unanimous decision, the U.S. Supreme Court ruled that EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. The Court did find, however, that there was some inconsistency between existing and "new" standards in their required attainment schedules. Such attainment-planning schedule inconsistencies centered mainly on the 8-hour ozone standard. EPA subsequently agreed to downgrade the attainment designation for a large number of communities to “non-attainment” for the 8-hour ozone standard.

Table 1

Ambient Air Quality Standards						
Pollutant	**Averaging Time**	**California Standards** [1]		**National Standards** [2]		
		Concentration [3]	**Method** [4]	**Primary** [3,5]	**Secondary** [3,6]	**Method** [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	**No National Standards**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page …

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (5/4/16)

Table 1 (continued)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

For more information please call ARB-PIO at (916) 322-2990 **California Air Resources Board (5/4/16)**

Table 2
Health Effects of Major Criteria Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Respirable Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California Air Resources Board (ARB) to recommend adoption of the statewide PM-2.5 standard that is more stringent than the federal standard. This standard was adopted in 2002. The State PM-2.5 standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, the ARB extensively evaluated health effects of ozone exposure. A new state standard for an 8-hour ozone exposure was adopted in 2005, which aligned with the exposure period for the federal 8-hour standard. The California 8-hour ozone standard of 0.07 ppm is more stringent than the federal 8-hour standard of 0.075 ppm. The state standard, however, does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining state standards, but there are no hard deadlines or any consequences of non-attainment. During the same re-evaluation process, the ARB adopted an annual state standard for nitrogen dioxide ($NO_{2)}$ that is more stringent than the corresponding federal standard, and strengthened the state one-hour NO_2 standard.

As part of EPA's 2002 consent decree on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for PM-2.5 were strengthened, a new class of PM in the 2.5 to 10 micron size was created, some PM-10 standards were revoked, and a distinction between rural and urban air quality was adopted. In December, 2012, the federal annual standard for PM-2.5 was reduced from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ which matches the California AAQS. The severity of the basin's non-attainment status for PM-2.5 may be increased by this action and thus require accelerated planning for future PM-2.5 attainment.

In response to continuing evidence that ozone exposure at levels just meeting federal clean air standards is demonstrably unhealthful, EPA had proposed a further strengthening of the 8-hour standard. A new 8-hour ozone standard was adopted in 2015 after extensive analysis and public input. The adopted national 8-hour ozone standard is 0.07 ppm which matches the current California standard. It will require three years of ambient data collection, then 2 years of non-attainment findings and planning protocol adoption, then several years of plan development and approval. Final air quality plans for the new standard are likely to be adopted around 2022. Ultimate attainment of the new standard in ozone problem areas such as Southern California might be after 2025.

In 2010 a new federal one-hour primary standard for nitrogen dioxide (NO_2) was adopted. This standard is more stringent than the existing state standard. Based upon air quality monitoring data in the South Coast Air Basin, the California Air Resources Board has requested the EPA to designate the basin as being in attainment for this standard. The federal standard for sulfur dioxide (SO_2) was also recently revised. However, with minimal combustion of coal and mandatory use of low sulfur fuels in California, SO_2 is typically not a problem pollutant.

BASELINE AIR QUALITY

Long-term air quality monitoring is carried out by the South Coast Air Quality Management District (SCAQMD) at various monitoring stations. There are no nearby stations that monitor the full spectrum of pollutants. Ozone, carbon monoxide, PM-2.5 and nitrogen oxides are monitored at the Pico Rivera facility, while 10-micron diameter particulate matter (PM-10) is measured at the Azusa station. Table 3 summarizes the last four years of monitoring data from a composite of these data resources. The following conclusions can be drawn from this data:

a. Photochemical smog (ozone) levels occasionally exceed standards. The 8-hour state ozone standard as well as the 1-hour state standard have been exceeded on less than two percent of all days in the past four years. The 8-hour federal standard has been exceeded on less than one percent of days for the same period. While ozone levels are still high, they are much lower than 10 to 20 years ago. Attainment of all clean air standards in the project vicinity is not likely to occur soon, but the severity and frequency of violations is expected to continue to slowly decline during the current decade

b. Measurements of carbon monoxide have shown very low baseline levels in comparison to the most stringent one- and eight-hour standards.

c. Respirable dust (PM-10) levels exceed the state standard on approximately 14 percent of measurement days in the last four years, but the less stringent federal PM-10 standard has not been violated once for the same period. Year to year fluctuations of overall maximum 24-hour PM-10 levels seem to follow no discernable trend.

d. A substantial fraction of PM-10 is comprised of ultra-small diameter particulates capable of being inhaled into deep lung tissue (PM-2.5). There have been only three violations of the maximum 24-hour concentration of all measurement days in the last four years. PM-2.5 can be an occasional air quality concern in the project area.

Although complete attainment of every clean air standard is not yet imminent, extrapolation of the steady improvement trend suggests that such attainment could occur within the reasonably near future.

Table 3
Air Quality Monitoring Summary (2016-2019)
(Number of Days Standards Were Exceeded, and
Maximum Levels During Such Violations)

Pollutant/Standard	2016	2017	2018	2019
Ozone[a]				
1-Hour > 0.09 ppm (S)	9	7	3	5
8-Hour > 0.07 ppm (S)	6	9	5	7
8- Hour > 0.075 ppm (F)	2	4	2	3
Max. 1-Hour Conc. (ppm)	0.11	0.12	0.12	0.11
Max. 8-Hour Conc. (ppm)	0.08	0.09	0.08	0.09
Carbon Monoxide				
1-Hour > 20. ppm (S)	0	0	0	0
1-Hour > 9. ppm (S, F)	0	0	0	0
Max 8-Hour Conc. (ppm)	1.7	2.2	1.8	1.9
Nitrogen Dioxide				
1-Hour > 0.18 ppm (S)	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.06	0.07	0.08	0.06
Respirable Particulates (PM-10)				
24-Hour > 50 $\mu g/m^3$ (S)	12/60	6/55	10/60	4/61
24-Hour > 150 $\mu g/m^3$ (F)	0/60	0/55	0/60	0/61
Max. 24-Hr. Conc. ($\mu g/m^3$)	41.	83.	78.	82.
Fine Particulates (PM-2.5)				
24-Hour > 35 $\mu g/m^3$ (F)	2/120	1/119	0/133	0/119
Max. 24-Hr. Conc. ($\mu g/m^3$)	46.6	49.5	35.4	29.6

S=State Standard
F=Federal Standard

Source: South Coast AQMD – Pico Rivera Air Monitoring Station for Ozone, CO, NOx and PM-2.5
Azusa Monitoring Station for PM-10
data: www.arb.ca.gov/adam/

AIR QUALITY PLANNING

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards. The SCAB could not meet the deadlines for ozone, nitrogen dioxide, carbon monoxide, or PM-10. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it several times as earlier attainment forecasts were shown to be overly optimistic.

The 1990 Federal Clean Air Act Amendment (CAAA) required that all states with air-sheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). Amendments to the SIP have been proposed, revised and approved over the past decade. The most current regional attainment emissions forecast for ozone precursors (ROG and NOx) and for carbon monoxide (CO) and for particulate matter are shown in Table 4. Substantial reductions in emissions of ROG, NOx and CO are forecast to continue throughout the next several decades. Unless new particulate control programs are implemented, PM-10 and PM-2.5 are forecast to slightly increase.

The Air Quality Management District (AQMD) adopted an updated clean air "blueprint" in August 2003. The 2003 Air Quality Management Plan (AQMP) was approved by the EPA in 2004. The AQMP outlined the air pollution measures needed to meet federal health-based standards for ozone by 2010 and for particulates (PM-10) by 2006. The 2003 AQMP was based upon the federal one-hour ozone standard which was revoked late in 2005 and replaced by an 8-hour federal standard. Because of the revocation of the hourly standard, a new air quality planning cycle was initiated.

With re-designation of the air basin as non-attainment for the 8-hour ozone standard, a new attainment plan was developed. This plan shifted most of the one-hour ozone standard attainment strategies to the 8-hour standard. As previously noted, the attainment date was to "slip" from 2010 to 2021. The updated attainment plan also includes strategies for ultimately meeting the federal PM-2.5 standard.

Because projected attainment by 2021 required control technologies that did not exist yet, the SCAQMD requested a voluntary "bump-up" from a "severe non-attainment" area to an "extreme non-attainment" designation for ozone. The extreme designation was to allow a longer time period for these technologies to develop. If attainment cannot be demonstrated within the specified deadline without relying on "black-box" measures, EPA would have been required to impose sanctions on the region had the bump-up request not been approved. In April 2010, the EPA approved the change in the non-attainment designation from "severe-17" to "extreme." This reclassification set a later attainment deadline (2024), but also required the air basin to adopt even more stringent emissions controls.

Table 4
South Coast Air Basin Emissions Forecasts (Emissions in tons/day)

Pollutant	2015[a]	2020[b]	2025[b]	2030[b]
NOx	357	289	266	257
VOC	400	393	393	391
PM-10	161	165	170	172
PM-2.5	67	68	70	71

[a]2015 Base Year.
[b]With current emissions reduction programs and adopted growth forecasts.
Source: California Air Resources Board, 2013 Almanac of Air Quality

In other air quality attainment plan reviews, EPA had disapproved part of the SCAB PM-2.5 attainment plan included in the AQMP. EPA stated that the current attainment plan relied on PM-2.5 control regulations that had not yet been approved or implemented. It was expected that a number of rules that were pending approval would remove the identified deficiencies. If these issues were not resolved within the next several years, federal funding sanctions for transportation projects could result. The 2012 AQMP included in the current California State Implementation Plan (SIP) was expected to remedy identified PM-2.5 planning deficiencies.

The federal Clean Air Act requires that non-attainment air basins have EPA approved attainment plans in place. This requirement includes the federal one-hour ozone standard even though that standard was revoked almost ten years ago. There was no approved attainment plan for the one-hour federal standard at the time of revocation. Through a legal quirk, the SCAQMD is now required to develop an AQMP for the long since revoked one-hour federal ozone standard. Because the current SIP for the basin contains a number of control measures for the 8-hour ozone standard that are equally effective for one-hour levels, the 2012 AQMP was believed to satisfy hourly attainment planning requirements.

AQMPs are required to be updated every three years. The 2012 AQMP was adopted in early 2013. An updated AQMP was required for completion in 2016. The 2016 AQMP was adopted by the SCAQMD Board in March, 2017, and has been submitted the California Air Resources Board for forwarding to the EPA. The 2016 AQMP acknowledges that motor vehicle emissions have been effectively controlled and that reductions in NOx, the continuing ozone problem pollutant, may need to come from major stationary sources (power plants, refineries, landfill flares, etc.). The current attainment deadlines for all federal non-attainment pollutants are now as follows:

8-hour ozone (70 ppb)	2032
Annual PM-2.5 (12 $\mu g/m^3$)	2025
8-hour ozone (75 ppb)	2024 (old standard)
1-hour ozone (120 ppb)	2023 (rescinded standard)

24-hour PM-2.5 (35 μg/m^3) 2019

The key challenge is that NOx emission levels, as a critical ozone precursor pollutant, are forecast to continue to exceed the levels that would allow the above deadlines to be met. Unless additional stringent NOx control measures are adopted and implemented, ozone attainment goals may not be met.

The proposed project does not directly relate to the AQMP in that there are no specific air quality programs or regulations water improvement projects. Conformity with adopted plans, forecasts and programs relative to population, housing, employment and land use is the primary yardstick by which impact significance of planned growth is determined. The SCAQMD, however, while acknowledging that the AQMP is a growth-accommodating document, does not favor designating regional impacts as less-than-significant just because the proposed development is consistent with regional growth projections. Air quality impact significance for the proposed project has therefore been analyzed on a project-specific basis.

AIR QUALITY IMPACT

STANDARDS OF SIGNIFICANCE

Air quality impacts are considered "significant" if they cause clean air standards to be violated where they are currently met, or if they "substantially" contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of the California CEQA Guidelines offers the following four tests of air quality impact significance. A project would have a potentially significant impact if it:

a) Conflicts with or obstructs implementation of the applicable air quality plan.

b) Results in a cumulatively considerable net increase of any criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
c) Exposes sensitive receptors to substantial pollutant concentrations.

d) Creates objectionable odors affecting a substantial number of people.

Primary Pollutants

Air quality impacts generally occur on two scales of motion. Near an individual source of emissions or a collection of sources such as a crowded intersection or parking lot, levels of those pollutants that are emitted in their already unhealthful form will be highest. Carbon monoxide (CO) is an example of such a pollutant. Primary pollutant impacts can generally be evaluated directly in comparison to appropriate clean air standards. Violations of these standards where they are currently met, or a measurable worsening of an existing or future violation, would be considered a significant impact. Many particulates, especially fugitive dust emissions, are also primary pollutants. Because of the non-attainment status of the South Coast Air Basin (SCAB) for PM-10, an aggressive dust control program is required to control fugitive dust during project construction.

Secondary Pollutants

Many pollutants, however, require time to transform from a more benign form to a more unhealthful contaminant. Their impact occurs regionally far from the source. Their incremental regional impact is minute on an individual basis and cannot be quantified except through complex photochemical computer models. Analysis of significance of such emissions is based upon a specified amount of emissions (pounds, tons, etc.) even though there is no way to translate those emissions directly into a corresponding ambient air quality impact.

Because of the chemical complexity of primary versus secondary pollutants, the SCAQMD has designated significant emissions levels as surrogates for evaluating regional air quality impact significance independent of chemical transformation processes. Projects with daily emissions that

exceed any of the following emission thresholds are recommended by the SCAQMD to be considered significant under CEQA guidelines.

Table 5
Daily Emissions Thresholds

Pollutant	Construction	Operations
ROG	75	55
NOx	100	55
CO	550	550
PM-10	150	150
PM-2.5	55	55
SOx	150	150
Lead	3	3

Source: SCAQMD CEQA Air Quality Handbook, November, 1993 Rev.

CONSTRUCTION ACTIVITY IMPACTS

CalEEMod was developed by the SCAQMD to provide a model by which to calculate both construction emissions and operational emissions from a variety of land use projects. It calculates both the daily maximum and annual average emissions for criteria pollutants as well as total or annual greenhouse gas (GHG) emissions.

The project is proposing to construct a second reservoir at the existing Plant No. 7 site to provide additional, necessary storage. The existing Plant No. 7 facility is located within an approximately 0.3-acre site, and it currently includes one 0.75 million gallon (MG) welded steel storage reservoir (66 feet in diameter by 40 feet high). The site is currently only accessible through a gated access driveway. The existing water storage reservoir is operational and in good condition.

The development of a new second reservoir at this location will require the following construction activities:

- installation of wrought iron fencing,
- grading for the reservoir foundation,
- construction of a new 0.6 MG water storage reservoir (60 feet in diameter and 40 feet high)
- related piping, pavement, and
- a driveway and pavement.

Construction was modeled in CalEEMod2016.3.2 using the indicated construction equipment and schedule for a project of this size as shown in Table 6. It is assumed that painting and drainage/piping will occur simultaneously.

Table 6
CalEEMod Construction Activity Equipment Fleet and Schedule

Grading and Fencing 2 months	1 Dozer
	1 Loader/Backhoe
	1 Grader
	1 Excavator
New Tank Construction 12 months	1 Crane/Hoe Ram
	1 Forklift
	2 Concrete Pumps
	1 Loader/Backhoe
	1 Generator Set
	4 Welders
Painting 2 months	2 Air Compressors
Drainage and Piping 2 months	1 Trencher
	1 Roller
	1 Loader/Backhoe
	1 Forklift

Utilizing this indicated equipment fleet and durations shown in Table 6 the following worst-case daily construction emissions are calculated by CalEEMod and are listed in Table 7.

Table 7
Construction Activity Emissions
Maximum Daily Emissions (pounds/day)

Maximal Construction Emissions	ROG	NOx	CO	SO_2	PM-10	PM-2.5
2021	2.1	14.7	16.4	0.0	1.5	1.0
2022	2.0	13.5	16.1	0.0	1.1	0.8
SCAQMD Thresholds	75	100	550	150	150	55

Peak daily construction activity emissions are estimated be below SCAQMD CEQA thresholds without the need for added mitigation.

Construction equipment exhaust contains carcinogenic compounds within the diesel exhaust particulates. The toxicity of diesel exhaust is evaluated relative to a 24-hour per day, 365 days per year, 70-year lifetime exposure. The SCAQMD does not generally require the analysis of construction-related diesel emissions relative to health risk due to the short period for which the majority of diesel exhaust would occur. Health risk analyses are typically assessed over a 9-, 30-, or 70-year timeframe and not over a relatively brief construction period due to the lack of health risk associated with such a brief exposure.

LOCALIZED SIGNIFICANCE THRESHOLDS

The SCAQMD has developed analysis parameters to evaluate ambient air quality on a local level in addition to the more regional emissions-based thresholds of significance. These analysis elements are called Localized Significance Thresholds (LSTs). LSTs were developed in response to Governing Board's Environmental Justice Enhancement Initiative 1-4 and the LST methodology was provisionally adopted in October 2003 and formally approved by SCAQMD's Mobile Source Committee in February 2005.

Use of an LST analysis for a project is optional. For the proposed project, the only source of possible LST impact would be during construction. LSTs are applicable for a sensitive receptor where it is possible that an individual could remain for 24 hours such as a residence, hospital or convalescent facility.

LSTs are only applicable to the following criteria pollutants: oxides of nitrogen (NOx), carbon monoxide (CO), and particulate matter (PM-10 and PM-2.5). LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor.

LST screening tables are available for 25, 50, 100, 200 and 500 meter source-receptor distances. Major uses surrounding the project site include: the Puente Hills Landfill is located to the east and north of the project site; Río Hondo College is to the west of the project site; and, the Rose Hills Cemetery facilities are to the south. Although not strictly a sensitive use because it is not occupied 24 hours a day, to be conservative the distance to the closest Río Hondo College building of almost 1,500 feet was used. Therefore a 500-meter separation distance was used.

The SCAQMD has issued guidance on applying CalEEMod to LSTs. LST pollutant screening level concentration data is currently published for 1, 2 and 5 acre sites for varying distances. For this project, the most stringent thresholds for a 1-acre site were applied.

The following thresholds and emissions in Table 8 are therefore determined (pounds per day):

Table 8
LST and Project Emissions (pounds/day)

LST 1 acre/500 meters West San Gabriel Valley	**CO**	**NOx**	**PM-10**	**PM-2.5**
LST Thresholds	7,270	164	152	77
Max On-Site Emissions				
2021	16	15	2	1
2022	16	13	1	1

CalEEMod Output in Appendix

LSTs were compared to the maximum daily construction activities. As seen in Table 8, even without use of dust control, emissions meet the LST for construction thresholds. LST impacts are less-than-significant.

OPERATIONAL IMPACTS

Operational air pollution emissions will be minimal. The proposed tank operates by gravity and is fed by an existing off-site booster station. The existing booster will not be running more frequently to fill the new reservoir (only once for the initial filing). Electrical generation of power will be used for pumping. Electrical consumption has no single uniquely related air pollution emissions source because power is supplied to and drawn from a regional grid. Electrical power is generated regionally by a combination of non-combustion (nuclear, hydroelectric, solar, wind, geothermal, etc.) and fossil fuel combustion sources. There is no direct nexus between consumption and the type of power source or the air basin where the source is located. Operational air pollution emissions from electrical generation are therefore not attributable on a project-specific basis.

Odor Impacts

Project operations (pumping and storage) are an essentially closed system with negligible odor potential. The reservoir will be designed with adequate freeboard (head space between the top of the water and the roof) to contain any surges without forcing the emergency vents to open. Odors will be briefly detectable during application of the interior epoxy coating and outdoor paint

application on the reservoir shell. Good painting practice (low wind speeds and high efficiency sprayers) will minimize odor or overspray and paint transport.

CONSTRUCTION EMISSIONS MINIMIZATION

Construction activities are not anticipated to cause dust emissions to exceed SCAQMD CEQA thresholds. Nevertheless, emissions minimization through enhanced dust control measures is recommended for use because of the non-attainment status of the air and proximity of educational uses. Recommended measures include:

Fugitive Dust Control

- Apply soil stabilizers or moisten inactive areas.
- Water exposed surfaces as needed to avoid visible dust leaving the construction site (typically 2-3 times/day).
- Cover all stock piles with tarps at the end of each day or as needed.
- Provide water spray during loading and unloading of earthen materials.
- Minimize in-out traffic from construction zone
- Cover all trucks hauling dirt, sand, or loose material and require all trucks to maintain at least two feet of freeboard
- Sweep streets daily if visible soil material is carried out from the construction site

Similarly, ozone precursor emissions (ROG and NOx) are calculated to be below SCAQMD CEQA thresholds. However, because of the regional non-attainment for photochemical smog, the use of reasonably available control measures for diesel exhaust is recommended. Combustion emissions control options include:

Exhaust Emissions Control

- Utilize well-tuned off-road construction equipment.
- Establish a preference for contractors using Tier 3 or better rated heavy equipment.
- Enforce 5-minute idling limits for both on-road trucks and off-road equipment.

GREENHOUSE GAS EMISSIONS

"Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation in some parts of the infrared spectrum. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. For purposes of planning and regulation, Section 15364.5 of the California Code of Regulations defines GHGs to include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders regarding greenhouse gases. GHG statues and executive orders (EO) include AB 32, SB 1368, EO S-03-05, EO S-20-06 and EO S-01-07.

AB 32 is one of the most significant pieces of environmental legislation that California has adopted. Among other things, it is designed to maintain California's reputation as a "national and international leader on energy conservation and environmental stewardship." It will have wide-ranging effects on California businesses and lifestyles as well as far reaching effects on other states and countries. A unique aspect of AB 32, beyond its broad and wide-ranging mandatory provisions and dramatic GHG reductions are the short time frames within which it must be implemented. Major components of the AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.
- Requires immediate "early action" control programs on the most readily controlled GHG sources.
- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25-40%, from business as usual, to be achieved by 2020.
- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementing regulations for AB 32 is under way. Maximum GHG reductions are expected to derive from increased vehicle fuel efficiency, from greater use of renewable energy and from increased structural energy efficiency. Additionally, through the California Climate Action Registry (CCAR now called the Climate Action Reserve), general and industry-specific protocols for assessing and reporting GHG emissions have been

developed. GHG sources are categorized into direct sources (i.e. company owned) and indirect sources (i.e. not company owned). Direct sources include combustion emissions from on-and off-road mobile sources, and fugitive emissions. Indirect sources include off-site electricity generation and non-company owned mobile sources.

THRESHOLDS OF SIGNIFICANCE

In response to the requirements of SB97, the State Resources Agency developed guidelines for the treatment of GHG emissions under CEQA. These new guidelines became state laws as part of Title 14 of the California Code of Regulations in March, 2010. The CEQA Appendix G guidelines were modified to include GHG as a required analysis element. A project would have a potentially significant impact if it:

- Generates GHG emissions, directly or indirectly, that may have a significant impact on the environment, or,

- Conflicts with an applicable plan, policy or regulation adopted to reduce GHG emissions.

Section 15064.4 of the Code specifies how significance of GHG emissions is to be evaluated. The process is broken down into quantification of project-related GHG emissions, making a determination of significance, and specification of any appropriate mitigation if impacts are found to be potentially significant. At each of these steps, the new GHG guidelines afford the lead agency with substantial flexibility.

Emissions identification may be quantitative, qualitative or based on performance standards. CEQA guidelines allow the lead agency to "select the model or methodology it considers most appropriate." The most common practice for transportation/combustion GHG emissions quantification is to use a computer model such as CalEEMod, as was used in the ensuing analysis.

The significance of those emissions then must be evaluated; the selection of a threshold of significance must take into consideration what level of GHG emissions would be cumulatively considerable. The guidelines are clear that they do not support a zero net emissions threshold. If the lead agency does not have sufficient expertise in evaluating GHG impacts, it may rely on thresholds adopted by an agency with greater expertise.

On December 5, 2008 the SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold for industrial projects where the SCAQMD is the lead agency (e.g., stationary source permit projects, rules, plans, etc.) of 10,000 Metric Tons (MT) CO_2 equivalent/year. In September 2010, the SCAQMD CEQA Significance Thresholds GHG Working Group released revisions which recommended a threshold of 3,000 MT CO_2e for all land use projects. This 3,000 MT/year recommendation has been used as a guideline for this analysis. In the absence of an adopted numerical threshold of significance, project related GHG emissions in excess of the guideline level are presumed to trigger a requirement for enhanced GHG reduction at the project level.

PROJECT RELATED GHG EMISSIONS GENERATION

Construction Activity GHG Emissions

The project is assumed to require approximately one year for construction but occurring over two calendar years. During project construction, the CalEEMod2016.3.2 computer model predicts that the construction activities will generate the annual CO_2e emissions identified in Table 10.

Table 10
Construction Emissions (Metric Tons CO_2e)

	CO_2e
Year 2021	139.7
Year 2022	241.4
Total	381.1
Amortized	**12.7**

CalEEMod Output provided in appendix

SCAQMD GHG emissions policy from construction activities is to amortize emissions over a 30-year lifetime. The amortized level is also provided. GHG impacts from construction are considered individually less-than-significant.

Consistency with GHG Plans, Programs and Policies

The County of Los Angeles (County) has developed the Community Climate Action Plan (CCAP)[i] to reduce greenhouse gas (GHG) emissions associated with community activities in the unincorporated areas of Los Angeles County. The CCAP addresses emissions from activities in the following sectors: building energy, transportation, water conveyance and wastewater processing, and waste generation. The CCAP also establishes a GHG reduction target consistent with the State's efforts to reduce GHG emissions and provides a roadmap for successfully implementing GHG reduction measures selected by the County. The County's GHG emissions reduction target of at least 11% below 2010 levels by 2020 is consistent with statewide reductions under AB 32.

Building energy consumption accounts for about 49% of the County's GHG inventory. Transportation emissions from on- and off-road vehicles are the second largest source of emissions (42%). The third largest source is community waste generation (7%). The remaining sources are water conveyance and wastewater generation (2%), agriculture (0.4%), and stationary sources (0.02%).

The County has identified local actions of which the majority include voluntary, incentive-based programs that will reduce emissions from both existing and new development in the County. Actions to address GHG emissions from building energy use are separated into two categories: energy efficiency and renewable energy. Energy efficiency measures reduce actual energy consumption through efficient design, whereas renewable energy measures reduce the carbon intensity of electricity generation.

This project is a water improvement use and the only applicable measure would be the following:

Waste Reduction, Reuse and Recycling

SW-1 Waste Diversion Goal

Effective in 2016 the California's Green Building Standards Code (CALGreen) required the diversion of at least 65 percent of the construction waste generated during non-residential "new construction" projects. Therefore, a plan will be developed whose goal would be that 65% of construction waste be diverted from landfills.

The County will track the CCAP's overall progress in terms of reducing GHG emissions in the unincorporated areas, as well as each CCAP action's progress and performance. Inventory updates will be incorporated into the General Plan Annual Progress Report and will provide information regarding overall trends in community emissions for the unincorporated areas.

The actions in the CCAP allow for the County to achieve its GHG reduction goal for 2020 for the unincorporated areas of LA County and satisfies the goal of meeting the recommendations for local governments in the Scoping Plan of Assembly Bill (AB) 32, California's Global Warming Solutions Act.

CalEEMod2016.3.2 Computer Model Output

- **Daily Emissions**
- **Annual Emissions**

SGV-470 Reservoir

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.30	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 0.3 acre site

Construction Phase - Grading: 2 months. Construction: 12 months, Painting: 2 months, Drainage and Piping: 2 months

Off-road Equipment - Painting: 2 air compressors

Off-road Equipment - Grading: 1 dozer, 1 loader/backhoe, 1 grader, 1 excavator

Trips and VMT - Worker trips: grading: 20, Construction: 40, Paving: 18, Painting: 10

Off-road Equipment - Tank Construction: 1 forklift, 2 concrete pumps, 1 loader/backhoe, 1 crane, 4 welders

Off-road Equipment - Drainage/Piping: 1 trencher, 1 roller, 1 loader/backhoe, 1 forklift

Construction Off-road Equipment Mitigation -

SGV-470 Reservoir - South Coast Air Basin, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	42.00
tblConstructionPhase	NumDays	100.00	260.00
tblConstructionPhase	NumDays	2.00	42.00
tblConstructionPhase	NumDays	5.00	42.00
tblConstructionPhase	PhaseEndDate	12/20/2021	10/30/2022
tblConstructionPhase	PhaseEndDate	12/6/2021	8/30/2022
tblConstructionPhase	PhaseEndDate	7/19/2021	8/29/2021
tblConstructionPhase	PhaseEndDate	12/13/2021	10/30/2022
tblConstructionPhase	PhaseStartDate	12/14/2021	9/1/2022
tblConstructionPhase	PhaseStartDate	7/20/2021	9/1/2021
tblConstructionPhase	PhaseStartDate	7/16/2021	7/1/2021
tblConstructionPhase	PhaseStartDate	12/7/2021	9/1/2022
tblLandUse	LotAcreage	0.00	0.30
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Building Construction

tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	UsageHours	1.00	4.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00

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					
2021	2.1367	14.6557	16.3968	0.0291	0.9763	0.7650	1.5471	0.4731	0.7429	0.9982	0.0000	2,691.0386	2,691.0386	0.4897	0.0000	2,700.2271
2022	1.9515	13.4995	16.1235	0.0290	0.4471	0.6578	1.1049	0.1186	0.6392	0.7578	0.0000	2,675.5675	2,675.5675	0.3567	0.0000	2,684.4840
Maximum	**2.1367**	**14.6557**	**16.3968**	**0.0291**	**0.9763**	**0.7650**	**1.5471**	**0.4731**	**0.7429**	**0.9982**	**0.0000**	**2,691.0386**	**2,691.0386**	**0.4897**	**0.0000**	**2,700.2271**

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					
2021	2.1367	6.9621	16.3968	0.0291	0.5623	0.7650	1.2121	0.2455	0.7429	0.8615	0.0000	2,691.0386	2,691.0386	0.4897	0.0000	2,700.2271
2022	1.9515	6.7900	16.1235	0.0290	0.4471	0.6578	1.1049	0.1186	0.6392	0.7578	0.0000	2,675.5675	2,675.5675	0.3567	0.0000	2,684.4840
Maximum	**2.1367**	**6.9621**	**16.3968**	**0.0291**	**0.5623**	**0.7650**	**1.2121**	**0.2455**	**0.7429**	**0.8615**	**0.0000**	**2,691.0386**	**2,691.0386**	**0.4897**	**0.0000**	**2,700.2271**

	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**	**51.16**	**0.00**	**0.00**	**29.09**	**0.00**	**12.63**	**38.47**	**0.00**	**7.79**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-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	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	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	Grading	Grading	7/1/2021	8/29/2021	5	42	
2	Building Construction	Building Construction	9/1/2021	8/30/2022	5	260	
3	Paving	Paving	9/1/2022	10/30/2022	5	42	
4	Architectural Coating	Architectural Coating	9/1/2022	10/30/2022	5	42	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	2	6.00	78	0.48
Grading	Graders	1	6.00	187	0.41
Building Construction	Pumps	2	6.00	84	0.74
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Grading	Excavators	1	6.00	158	0.38
Paving	Rollers	1	7.00	80	0.38
Building Construction	Welders	4	6.00	46	0.45
Grading	Rubber Tired Dozers	1	4.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Trenchers	1	7.00	78	0.50
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Forklifts	1	7.00	89	0.20

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2021

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					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.1753	12.9660	7.4933	0.0154		0.5692	0.5692		0.5236	0.5236		1,495.7582	1,495.7582	0.4838		1,507.8522
Total	**1.1753**	**12.9660**	**7.4933**	**0.0154**	**0.7528**	**0.5692**	**1.3219**	**0.4138**	**0.5236**	**0.9374**		**1,495.7582**	**1,495.7582**	**0.4838**		**1,507.8522**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0546	0.7509	2.2200e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		221.3797	221.3797	5.9700e-003		221.5288
Total	**0.0837**	**0.0546**	**0.7509**	**2.2200e-003**	**0.2236**	**1.6500e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**221.3797**	**221.3797**	**5.9700e-003**		**221.5288**

3.2 Grading - 2021

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					0.3387	0.0000	0.3387	0.1862	0.0000	0.1862			0.0000			0.0000
Off-Road	1.1753	6.9075	7.4933	0.0154		0.5692	0.5692		0.5236	0.5236	0.0000	1,495.7582	1,495.7582	0.4838		1,507.8522
Total	**1.1753**	**6.9075**	**7.4933**	**0.0154**	**0.3387**	**0.5692**	**0.9079**	**0.1862**	**0.5236**	**0.7098**	**0.0000**	**1,495.7582**	**1,495.7582**	**0.4838**		**1,507.8522**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0546	0.7509	2.2200e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		221.3797	221.3797	5.9700e-003		221.5288
Total	**0.0837**	**0.0546**	**0.7509**	**2.2200e-003**	**0.2236**	**1.6500e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**221.3797**	**221.3797**	**5.9700e-003**		**221.5288**

3.3 Building Construction - 2021

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	1.9693	14.5465	14.8950	0.0247		0.7617	0.7617		0.7399	0.7399		2,248.2793	2,248.2793	0.3556		2,257.1694
Total	**1.9693**	**14.5465**	**14.8950**	**0.0247**		**0.7617**	**0.7617**		**0.7399**	**0.7399**		**2,248.2793**	**2,248.2793**	**0.3556**		**2,257.1694**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1674	0.1092	1.5019	4.4400e-003	0.4471	3.3100e-003	0.4504	0.1186	3.0500e-003	0.1216		442.7593	442.7593	0.0119		443.0577
Total	**0.1674**	**0.1092**	**1.5019**	**4.4400e-003**	**0.4471**	**3.3100e-003**	**0.4504**	**0.1186**	**3.0500e-003**	**0.1216**		**442.7593**	**442.7593**	**0.0119**		**443.0577**

3.3 Building Construction - 2021

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	1.9693	5.2048	14.8950	0.0247		0.7617	0.7617		0.7399	0.7399	0.0000	2,248.2793	2,248.2793	0.3556		2,257.1694
Total	**1.9693**	**5.2048**	**14.8950**	**0.0247**		**0.7617**	**0.7617**		**0.7399**	**0.7399**	**0.0000**	**2,248.2793**	**2,248.2793**	**0.3556**		**2,257.1694**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1674	0.1092	1.5019	4.4400e-003	0.4471	3.3100e-003	0.4504	0.1186	3.0500e-003	0.1216		442.7593	442.7593	0.0119		443.0577
Total	**0.1674**	**0.1092**	**1.5019**	**4.4400e-003**	**0.4471**	**3.3100e-003**	**0.4504**	**0.1186**	**3.0500e-003**	**0.1216**		**442.7593**	**442.7593**	**0.0119**		**443.0577**

3.3 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	1.7945	13.4009	14.7347	0.0247		0.6546	0.6546		0.6362	0.6362		2,248.6623	2,248.6623	0.3459		2,257.3090
Total	**1.7945**	**13.4009**	**14.7347**	**0.0247**		**0.6546**	**0.6546**		**0.6362**	**0.6362**		**2,248.6623**	**2,248.6623**	**0.3459**		**2,257.3090**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1571	0.0986	1.3889	4.2800e-003	0.4471	3.2100e-003	0.4503	0.1186	2.9600e-003	0.1215		426.9053	426.9053	0.0108		427.1750
Total	**0.1571**	**0.0986**	**1.3889**	**4.2800e-003**	**0.4471**	**3.2100e-003**	**0.4503**	**0.1186**	**2.9600e-003**	**0.1215**		**426.9053**	**426.9053**	**0.0108**		**427.1750**

3.3 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7945	4.5590	14.7347	0.0247		0.6546	0.6546		0.6362	0.6362	0.0000	2,248.6623	2,248.6623	0.3459		2,257.3090
Total	**1.7945**	**4.5590**	**14.7347**	**0.0247**		**0.6546**	**0.6546**		**0.6362**	**0.6362**	**0.0000**	**2,248.6623**	**2,248.6623**	**0.3459**		**2,257.3090**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1571	0.0986	1.3889	4.2800e-003	0.4471	3.2100e-003	0.4503	0.1186	2.9600e-003	0.1215		426.9053	426.9053	0.0108		427.1750
Total	**0.1571**	**0.0986**	**1.3889**	**4.2800e-003**	**0.4471**	**3.2100e-003**	**0.4503**	**0.1186**	**2.9600e-003**	**0.1215**		**426.9053**	**426.9053**	**0.0108**		**427.1750**

3.4 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	0.7095	6.8760	6.8860	9.3300e-003		0.4379	0.4379		0.4029	0.4029		903.6107	903.6107	0.2923		910.9168
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7095**	**6.8760**	**6.8860**	**9.3300e-003**		**0.4379**	**0.4379**		**0.4029**	**0.4029**		**903.6107**	**903.6107**	**0.2923**		**910.9168**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0707	0.0444	0.6250	1.9300e-003	0.2012	1.4500e-003	0.2026	0.0534	1.3300e-003	0.0547		192.1074	192.1074	4.8500e-003		192.2287
Total	**0.0707**	**0.0444**	**0.6250**	**1.9300e-003**	**0.2012**	**1.4500e-003**	**0.2026**	**0.0534**	**1.3300e-003**	**0.0547**		**192.1074**	**192.1074**	**4.8500e-003**		**192.2287**

3.4 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	lb/day										lb/day					
Off-Road	0.7095	3.9040	6.8860	9.3300e-003		0.4379	0.4379		0.4029	0.4029	0.0000	903.6107	903.6107	0.2923		910.9168
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7095**	**3.9040**	**6.8860**	**9.3300e-003**		**0.4379**	**0.4379**		**0.4029**	**0.4029**	**0.0000**	**903.6107**	**903.6107**	**0.2923**		**910.9168**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0707	0.0444	0.6250	1.9300e-003	0.2012	1.4500e-003	0.2026	0.0534	1.3300e-003	0.0547		192.1074	192.1074	4.8500e-003		192.2287
Total	**0.0707**	**0.0444**	**0.6250**	**1.9300e-003**	**0.2012**	**1.4500e-003**	**0.2026**	**0.0534**	**1.3300e-003**	**0.0547**		**192.1074**	**192.1074**	**4.8500e-003**		**192.2287**

3.5 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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4091	2.8170	3.6272	5.9400e-003		0.1634	0.1634		0.1634	0.1634		562.8961	562.8961	0.0367		563.8123
Total	**0.4091**	**2.8170**	**3.6272**	**5.9400e-003**		**0.1634**	**0.1634**		**0.1634**	**0.1634**		**562.8961**	**562.8961**	**0.0367**		**563.8123**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0393	0.0247	0.3472	1.0700e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		106.7263	106.7263	2.7000e-003		106.7937
Total	**0.0393**	**0.0247**	**0.3472**	**1.0700e-003**	**0.1118**	**8.0000e-004**	**0.1126**	**0.0296**	**7.4000e-004**	**0.0304**		**106.7263**	**106.7263**	**2.7000e-003**		**106.7937**

3.5 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	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4091	2.8170	3.6272	5.9400e-003		0.1634	0.1634		0.1634	0.1634	0.0000	562.8961	562.8961	0.0367		563.8123
Total	**0.4091**	**2.8170**	**3.6272**	**5.9400e-003**		**0.1634**	**0.1634**		**0.1634**	**0.1634**	**0.0000**	**562.8961**	**562.8961**	**0.0367**		**563.8123**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0393	0.0247	0.3472	1.0700e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		106.7263	106.7263	2.7000e-003		106.7937
Total	**0.0393**	**0.0247**	**0.3472**	**1.0700e-003**	**0.1118**	**8.0000e-004**	**0.1126**	**0.0296**	**7.4000e-004**	**0.0304**		**106.7263**	**106.7263**	**2.7000e-003**		**106.7937**

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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	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
User Defined Industrial	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
User Defined Industrial	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896

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					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	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					
User Defined Industrial	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	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

SGV-470 Reservoir

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.30	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 0.3 acre site

Construction Phase - Grading: 2 months. Construction: 12 months, Painting: 2 months, Drainage and Piping: 2 months

Off-road Equipment - Painting: 2 air compressors

Off-road Equipment - Grading: 1 dozer, 1 loader/backhoe, 1 grader, 1 excavator

Trips and VMT - Worker trips: grading: 20, Construction: 40, Paving: 18, Painting: 10

Off-road Equipment - Tank Construction: 1 forklift, 2 concrete pumps, 1 loader/backhoe, 1 crane, 4 welders

Off-road Equipment - Drainage/Piping: 1 trencher, 1 roller, 1 loader/backhoe, 1 forklift

Construction Off-road Equipment Mitigation -

SGV-470 Reservoir - South Coast Air Basin, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	42.00
tblConstructionPhase	NumDays	100.00	260.00
tblConstructionPhase	NumDays	2.00	42.00
tblConstructionPhase	NumDays	5.00	42.00
tblConstructionPhase	PhaseEndDate	12/20/2021	10/30/2022
tblConstructionPhase	PhaseEndDate	12/6/2021	8/30/2022
tblConstructionPhase	PhaseEndDate	7/19/2021	8/29/2021
tblConstructionPhase	PhaseEndDate	12/13/2021	10/30/2022
tblConstructionPhase	PhaseStartDate	12/14/2021	9/1/2022
tblConstructionPhase	PhaseStartDate	7/20/2021	9/1/2021
tblConstructionPhase	PhaseStartDate	7/16/2021	7/1/2021
tblConstructionPhase	PhaseStartDate	12/7/2021	9/1/2022
tblLandUse	LotAcreage	0.00	0.30
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Building Construction

tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	UsageHours	1.00	4.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00

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					
2021	0.1204	0.9191	0.8888	1.6400e-003	0.0397	0.0457	0.0854	0.0150	0.0437	0.0588	0.0000	139.0931	139.0931	0.0240	0.0000	139.6924
2022	0.1935	1.3673	1.6178	2.8500e-003	0.0442	0.0693	0.1134	0.0117	0.0669	0.0786	0.0000	240.5279	240.5279	0.0342	0.0000	241.3825
Maximum	**0.1935**	**1.3673**	**1.6178**	**2.8500e-003**	**0.0442**	**0.0693**	**0.1134**	**0.0150**	**0.0669**	**0.0786**	**0.0000**	**240.5279**	**240.5279**	**0.0342**	**0.0000**	**241.3825**

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					
2021	0.1204	0.3808	0.8888	1.6400e-003	0.0310	0.0457	0.0767	0.0103	0.0437	0.0540	0.0000	139.0930	139.0930	0.0240	0.0000	139.6923
2022	0.1935	0.5444	1.6178	2.8500e-003	0.0442	0.0693	0.1134	0.0117	0.0669	0.0786	0.0000	240.5276	240.5276	0.0342	0.0000	241.3823
Maximum	**0.1935**	**0.5444**	**1.6178**	**2.8500e-003**	**0.0442**	**0.0693**	**0.1134**	**0.0117**	**0.0669**	**0.0786**	**0.0000**	**240.5276**	**240.5276**	**0.0342**	**0.0000**	**241.3823**

	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**	**59.53**	**0.00**	**0.00**	**10.37**	**0.00**	**4.37**	**17.85**	**0.00**	**3.48**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

SGV-470 Reservoir - South Coast Air Basin, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-1-2021	9-30-2021	0.4859	0.2560
2	10-1-2021	12-31-2021	0.5527	0.2457
3	1-1-2022	3-31-2022	0.4975	0.2133
4	4-1-2022	6-30-2022	0.5022	0.2148
5	7-1-2022	9-30-2022	0.4544	0.2299
		Highest	0.5527	0.2560

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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-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	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-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	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-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	Grading	Grading	7/1/2021	8/29/2021	5	42	
2	Building Construction	Building Construction	9/1/2021	8/30/2022	5	260	
3	Paving	Paving	9/1/2022	10/30/2022	5	42	
4	Architectural Coating	Architectural Coating	9/1/2022	10/30/2022	5	42	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	2	6.00	78	0.48
Grading	Graders	1	6.00	187	0.41
Building Construction	Pumps	2	6.00	84	0.74
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Grading	Excavators	1	6.00	158	0.38
Paving	Rollers	1	7.00	80	0.38
Building Construction	Welders	4	6.00	46	0.45
Grading	Rubber Tired Dozers	1	4.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Trenchers	1	7.00	78	0.50
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Forklifts	1	7.00	89	0.20

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2021

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					0.0158	0.0000	0.0158	8.6900e-003	0.0000	8.6900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0247	0.2723	0.1574	3.2000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	28.4955	28.4955	9.2200e-003	0.0000	28.7259
Total	**0.0247**	**0.2723**	**0.1574**	**3.2000e-004**	**0.0158**	**0.0120**	**0.0278**	**8.6900e-003**	**0.0110**	**0.0197**	**0.0000**	**28.4955**	**28.4955**	**9.2200e-003**	**0.0000**	**28.7259**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7500e-003	1.3000e-003	0.0147	4.0000e-005	4.6100e-003	3.0000e-005	4.6400e-003	1.2200e-003	3.0000e-005	1.2600e-003	0.0000	4.0179	4.0179	1.1000e-004	0.0000	4.0206
Total	**1.7500e-003**	**1.3000e-003**	**0.0147**	**4.0000e-005**	**4.6100e-003**	**3.0000e-005**	**4.6400e-003**	**1.2200e-003**	**3.0000e-005**	**1.2600e-003**	**0.0000**	**4.0179**	**4.0179**	**1.1000e-004**	**0.0000**	**4.0206**

3.2 Grading - 2021

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					7.1100e-003	0.0000	7.1100e-003	3.9100e-003	0.0000	3.9100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0247	0.1451	0.1574	3.2000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	28.4955	28.4955	9.2200e-003	0.0000	28.7259
Total	**0.0247**	**0.1451**	**0.1574**	**3.2000e-004**	**7.1100e-003**	**0.0120**	**0.0191**	**3.9100e-003**	**0.0110**	**0.0149**	**0.0000**	**28.4955**	**28.4955**	**9.2200e-003**	**0.0000**	**28.7259**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7500e-003	1.3000e-003	0.0147	4.0000e-005	4.6100e-003	3.0000e-005	4.6400e-003	1.2200e-003	3.0000e-005	1.2600e-003	0.0000	4.0179	4.0179	1.1000e-004	0.0000	4.0206
Total	**1.7500e-003**	**1.3000e-003**	**0.0147**	**4.0000e-005**	**4.6100e-003**	**3.0000e-005**	**4.6400e-003**	**1.2200e-003**	**3.0000e-005**	**1.2600e-003**	**0.0000**	**4.0179**	**4.0179**	**1.1000e-004**	**0.0000**	**4.0206**

3.3 Building Construction - 2021

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	0.0867	0.6401	0.6554	1.0900e-003		0.0335	0.0335		0.0326	0.0326	0.0000	89.7426	89.7426	0.0142	0.0000	90.0975
Total	**0.0867**	**0.6401**	**0.6554**	**1.0900e-003**		**0.0335**	**0.0335**		**0.0326**	**0.0326**	**0.0000**	**89.7426**	**89.7426**	**0.0142**	**0.0000**	**90.0975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	5.4300e-003	0.0614	1.9000e-004	0.0193	1.5000e-004	0.0195	5.1300e-003	1.3000e-004	5.2600e-003	0.0000	16.8371	16.8371	4.5000e-004	0.0000	16.8484
Total	**7.3100e-003**	**5.4300e-003**	**0.0614**	**1.9000e-004**	**0.0193**	**1.5000e-004**	**0.0195**	**5.1300e-003**	**1.3000e-004**	**5.2600e-003**	**0.0000**	**16.8371**	**16.8371**	**4.5000e-004**	**0.0000**	**16.8484**

3.3 Building Construction - 2021

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	0.0867	0.2290	0.6554	1.0900e-003		0.0335	0.0335		0.0326	0.0326	0.0000	89.7425	89.7425	0.0142	0.0000	90.0974
Total	**0.0867**	**0.2290**	**0.6554**	**1.0900e-003**		**0.0335**	**0.0335**		**0.0326**	**0.0326**	**0.0000**	**89.7425**	**89.7425**	**0.0142**	**0.0000**	**90.0974**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	5.4300e-003	0.0614	1.9000e-004	0.0193	1.5000e-004	0.0195	5.1300e-003	1.3000e-004	5.2600e-003	0.0000	16.8371	16.8371	4.5000e-004	0.0000	16.8484
Total	**7.3100e-003**	**5.4300e-003**	**0.0614**	**1.9000e-004**	**0.0193**	**1.5000e-004**	**0.0195**	**5.1300e-003**	**1.3000e-004**	**5.2600e-003**	**0.0000**	**16.8371**	**16.8371**	**4.5000e-004**	**0.0000**	**16.8484**

3.3 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	0.1543	1.1525	1.2672	2.1200e-003		0.0563	0.0563		0.0547	0.0547	0.0000	175.4359	175.4359	0.0270	0.0000	176.1105
Total	**0.1543**	**1.1525**	**1.2672**	**2.1200e-003**		**0.0563**	**0.0563**		**0.0547**	**0.0547**	**0.0000**	**175.4359**	**175.4359**	**0.0270**	**0.0000**	**176.1105**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0134	9.5900e-003	0.1109	3.5000e-004	0.0377	2.8000e-004	0.0380	0.0100	2.5000e-004	0.0103	0.0000	31.7301	31.7301	8.0000e-004	0.0000	31.7501
Total	**0.0134**	**9.5900e-003**	**0.1109**	**3.5000e-004**	**0.0377**	**2.8000e-004**	**0.0380**	**0.0100**	**2.5000e-004**	**0.0103**	**0.0000**	**31.7301**	**31.7301**	**8.0000e-004**	**0.0000**	**31.7501**

3.3 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	0.1543	0.3921	1.2672	2.1200e-003		0.0563	0.0563		0.0547	0.0547	0.0000	175.4357	175.4357	0.0270	0.0000	176.1103
Total	**0.1543**	**0.3921**	**1.2672**	**2.1200e-003**		**0.0563**	**0.0563**		**0.0547**	**0.0547**	**0.0000**	**175.4357**	**175.4357**	**0.0270**	**0.0000**	**176.1103**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0134	9.5900e-003	0.1109	3.5000e-004	0.0377	2.8000e-004	0.0380	0.0100	2.5000e-004	0.0103	0.0000	31.7301	31.7301	8.0000e-004	0.0000	31.7501
Total	**0.0134**	**9.5900e-003**	**0.1109**	**3.5000e-004**	**0.0377**	**2.8000e-004**	**0.0380**	**0.0100**	**2.5000e-004**	**0.0103**	**0.0000**	**31.7301**	**31.7301**	**8.0000e-004**	**0.0000**	**31.7501**

3.4 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	0.0149	0.1444	0.1446	2.0000e-004		9.2000e-003	9.2000e-003		8.4600e-003	8.4600e-003	0.0000	17.2146	17.2146	5.5700e-003	0.0000	17.3538
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0149**	**0.1444**	**0.1446**	**2.0000e-004**		**9.2000e-003**	**9.2000e-003**		**8.4600e-003**	**8.4600e-003**	**0.0000**	**17.2146**	**17.2146**	**5.5700e-003**	**0.0000**	**17.3538**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4800e-003	1.0500e-003	0.0122	4.0000e-005	4.1500e-003	3.0000e-005	4.1800e-003	1.1000e-003	3.0000e-005	1.1300e-003	0.0000	3.4866	3.4866	9.0000e-005	0.0000	3.4888
Total	**1.4800e-003**	**1.0500e-003**	**0.0122**	**4.0000e-005**	**4.1500e-003**	**3.0000e-005**	**4.1800e-003**	**1.1000e-003**	**3.0000e-005**	**1.1300e-003**	**0.0000**	**3.4866**	**3.4866**	**9.0000e-005**	**0.0000**	**3.4888**

3.4 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	0.0149	0.0820	0.1446	2.0000e-004		9.2000e-003	9.2000e-003		8.4600e-003	8.4600e-003	0.0000	17.2146	17.2146	5.5700e-003	0.0000	17.3538
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0149**	**0.0820**	**0.1446**	**2.0000e-004**		**9.2000e-003**	**9.2000e-003**		**8.4600e-003**	**8.4600e-003**	**0.0000**	**17.2146**	**17.2146**	**5.5700e-003**	**0.0000**	**17.3538**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4800e-003	1.0500e-003	0.0122	4.0000e-005	4.1500e-003	3.0000e-005	4.1800e-003	1.1000e-003	3.0000e-005	1.1300e-003	0.0000	3.4866	3.4866	9.0000e-005	0.0000	3.4888
Total	**1.4800e-003**	**1.0500e-003**	**0.0122**	**4.0000e-005**	**4.1500e-003**	**3.0000e-005**	**4.1800e-003**	**1.1000e-003**	**3.0000e-005**	**1.1300e-003**	**0.0000**	**3.4866**	**3.4866**	**9.0000e-005**	**0.0000**	**3.4888**

3.5 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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5900e-003	0.0592	0.0762	1.2000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	10.7237	10.7237	7.0000e-004	0.0000	10.7411
Total	**8.5900e-003**	**0.0592**	**0.0762**	**1.2000e-004**		**3.4300e-003**	**3.4300e-003**		**3.4300e-003**	**3.4300e-003**	**0.0000**	**10.7237**	**10.7237**	**7.0000e-004**	**0.0000**	**10.7411**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.2000e-004	5.9000e-004	6.7700e-003	2.0000e-005	2.3000e-003	2.0000e-005	2.3200e-003	6.1000e-004	2.0000e-005	6.3000e-004	0.0000	1.9370	1.9370	5.0000e-005	0.0000	1.9382
Total	**8.2000e-004**	**5.9000e-004**	**6.7700e-003**	**2.0000e-005**	**2.3000e-003**	**2.0000e-005**	**2.3200e-003**	**6.1000e-004**	**2.0000e-005**	**6.3000e-004**	**0.0000**	**1.9370**	**1.9370**	**5.0000e-005**	**0.0000**	**1.9382**

3.5 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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5900e-003	0.0592	0.0762	1.2000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	10.7237	10.7237	7.0000e-004	0.0000	10.7411
Total	**8.5900e-003**	**0.0592**	**0.0762**	**1.2000e-004**		**3.4300e-003**	**3.4300e-003**		**3.4300e-003**	**3.4300e-003**	**0.0000**	**10.7237**	**10.7237**	**7.0000e-004**	**0.0000**	**10.7411**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.2000e-004	5.9000e-004	6.7700e-003	2.0000e-005	2.3000e-003	2.0000e-005	2.3200e-003	6.1000e-004	2.0000e-005	6.3000e-004	0.0000	1.9370	1.9370	5.0000e-005	0.0000	1.9382
Total	**8.2000e-004**	**5.9000e-004**	**6.7700e-003**	**2.0000e-005**	**2.3000e-003**	**2.0000e-005**	**2.3200e-003**	**6.1000e-004**	**2.0000e-005**	**6.3000e-004**	**0.0000**	**1.9370**	**1.9370**	**5.0000e-005**	**0.0000**	**1.9382**

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
User Defined Industrial	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
User Defined Industrial	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
User Defined Industrial	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896

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

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					
User Defined Industrial	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					
User Defined Industrial	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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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

	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	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	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			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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

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 2a

BIOLOGICAL RESOURCES ASSESSMENT
FOR PLANT NO. 7 RESERVOIR PROJECT
RIO HONDO COLLEGE – UNINCORPORATED NORTH WHITTIER, CA
SAN GABRIEL VALLEY WATER COMPANY
(Updated due to revised site plan)

Unincorporated North Whitter, Los Angeles County, California
USGS – El Monte 7.5 Quadrangle
Fractional Section 3 portion of Township 2 South, Range 11 West

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Date Prepared: May 2022

Prepared for:

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Prepared by:

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CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



_____

Lisa Patterson, National Senior Environmental Project Manager

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WILDLIFE SPECIES DETECTED AT THE PROJECT SITE, 2021 4

Table 2. Species List

Table 3 – Site Photographs

Appendix A – CNDDB / I Pac List

Appendix B – Focused CAGN Survey Report

Appendix C – Regulatory Framework

1 INTRODUCTION AND SUMMARY OF FINDINGS

Jacobs Engineering Group was retained by Tom Dodson & Associates (TDA) to prepare a Biological Resources Assessment (BRA) report for the San Gabriel Valley Water Company's (SGVWC) Plant No. 7 Reservoir proposed the installation of a new 0.6-million-gallon water storage tank measuring 60 feet in diameter and 40 feet in height. Associated improvements proposed at the project site would include piping, grading and pavement for the reservoir foundation, realignment of a segment of Observatory Way, and construction of a retaining wall and wrought iron fences around the perimeter (Project). The proposed Project site is located on approximately 0.6 acre of partially developed land in an unincorporated North Whittier, Los Angeles County, California. The subject property of the study is located along Observatory Road, on the eastern edge of the Rio Hondo College campus, to the north of the Rose Hills Memorial. The site is mapped within the United States Geological Survey (USGS) 7.5-minute topographic quadrangle "El Monte", fractional section 3 portion of Township 2 South and Range 11 West. (See Figure 1 – Regional Location Map and Figure 2 – Site Location Map)

The project area is situated on the southern rim of the San Gabriel Valley, a broad inland valley extending from the San Rafael Hills in the west to San Dimas in the east and bounded by the San Gabriel Mountains on the north and the Puente Hills on the south. More specifically, it lies in the northern Puente Hills, surrounded by the Rose Hills Memorial Park to the south, Rio Hondo College to the west, and the Puente Hills Landfill to the north and east.

Elevations on the property range from 570 feet to 621 feet above mean sea level, with a gradual incline to the northeast. An existing water tank known as the Horton Tank currently occupies the northeastern portion of the project area, connected to Observatory Way by an asphalt-paved access road and encircled by approximately 25 feet of asphalt pavement (Figs. 3, 4). Most of the ground surface in the project area is previously disturbed. The BRA fieldwork was conducted by Jacobs biologist, Lisa Patterson, on April 16, 2021. The purpose of the BRA is to address potential effects of the Project to designated Critical Habitats and/or any species currently listed or formally proposed for listing as endangered or threatened under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) or species designated as sensitive by the California Department of Fish and Wildlife (CDFW) and/or the California Native Plant Society (CNPS).

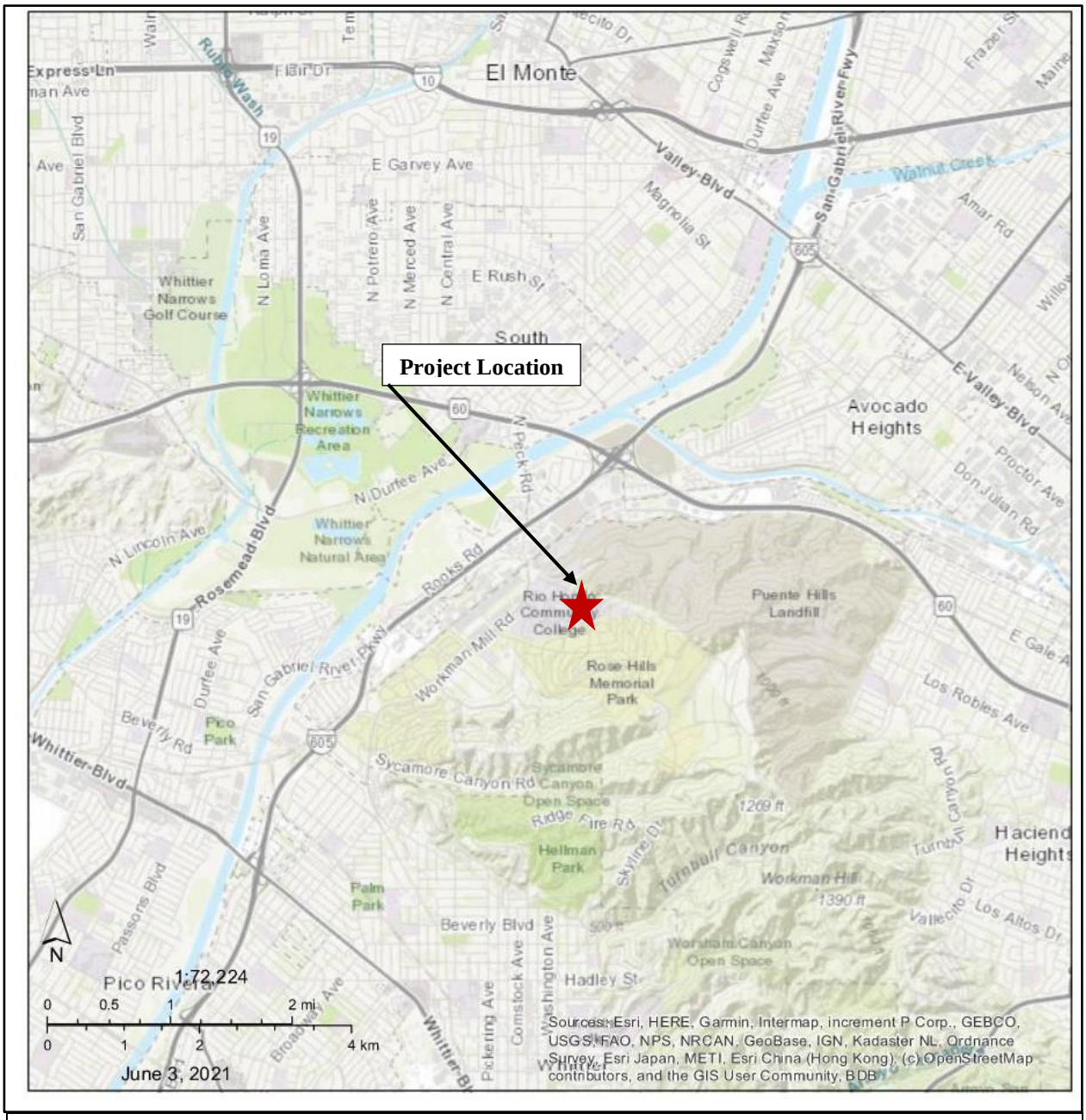
The climate and environment of the region are typical of southern California's inland valleys, with an average high temperature of 87ºF in August and an average low temperature of 44ºF in December. Rainfall is typically less than 20 inches annually, most of which occurs between November and April.

The Project Area of Potential Effect (APE) was assessed for sensitive species known to occur locally. Attention was focused on those state and/or federally listed as threatened or endangered species and California Fully Protected species that have been documented in the Project vicinity, whose habitat requirements are present within or adjacent to the Project survey area. There are several sensitive species documented within the Project vicinity, including the following State and federally-listed species: California gnatcatcher (*Polioptila californica californica*)(CAGN); Least Bell's vireo (Vireo bellii pusillus; Southwestern Willow Flycatcher (*Empidonax traillii extimus*); Swainson's hawk (Buteo swainsoni), Western Yellow-billed cuckoo (*Coccyzus americanus occidentalis*), Bank swallow (*Riparia riparia*); and Crotch bumble bee (*Bombus crotchii*). The result of this habitat assessment and survey was that disturbed coastal sage scrub habitat occurs withing the Project survey area. Although the habitat is marginally suitable for CAGN, there is more suitable habitat and historic locations in proximity several hundred feet away. Therefore, a protocol focused CAGN survey was conducted in during the non-breeding season of 2021-2022, and the survey report is attached as Appendix B. There is no suitable habitat for the remaining above listed species on site, and no further surveys are warranted.

The project is located within the mapped federal Designated Critical Habitat of the coastal California gnatcatcher. Although there are remnant patches of native chaparral sage scrub plants, they are sporadically scattered amongst non-native invasive species, and adjacent to existing roads and developed areas; and are unlikely to support sensitive species. The APE contains only marginally suitable habitat, and the protocol focused surveys conducted during the non-breeding season of 2021-2022 determined the species is absent from the site. Therefore, the project would not result in a take of this species or the adverse modification of designated critical habitat.

No other listed or otherwise sensitive species or sensitive habitat was observed within the Project APE and none are expected to occur on site.

No intermittent or ephemeral dry washes that would meet the definitions of State and federal jurisdictional waters as defined by Section 1600 of the State of California Fish and Game Code (FGC) or "Waters of the United States" (WoUS) as defined by Section 404 of the Clean Water Act (CWA) occur on the Project site. Therefore, no regulatory permits from these agencies may be required for this Project.



JACOBS

Regional Location
FIGURE 1

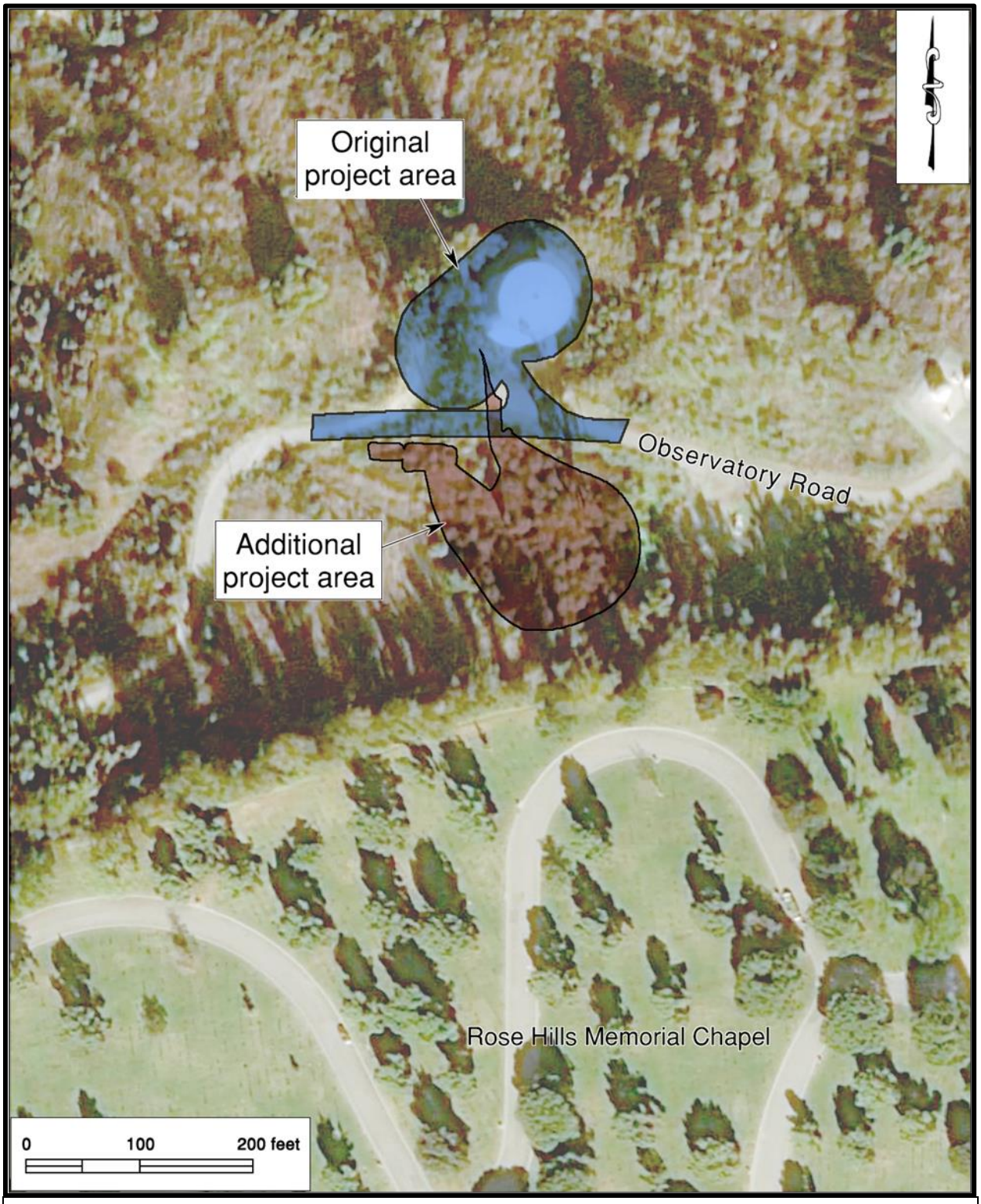


JACOBS

Site Location Map

SOURCE: Google Earth and USGS "El Monte"

FIGURE 2



Aerial Photograph of Project Area

SOURCE: Google Earth

FIGURE 3

1.1 Location

The proposed Project site is located on approximately 0.6 acre of partially developed land in an unincorporated North Whittier, Los Angeles County, California. The subject property of the study is located along Observatory Road, on the eastern edge of the Rio Hondo College campus, to the north of the Rose Hills Memorial. The site is mapped within the United States Geological Survey (USGS) 7.5-minute topographic quadrangle "El Monte", fractional section 3 portion of Township 2 South and Range 11 West. (See Figure 1 – Regional Location Map and Figure 2 – Site Location Map)

1.2 Environmental Setting

The project area is situated on the southern rim of the San Gabriel Valley, a broad inland valley extending from the San Rafael Hills in the west to San Dimas in the east and bounded by the San Gabriel Mountains on the north and the Puente Hills on the south. More specifically, it lies in the northern Puente Hills, surrounded by the Rose Hills Memorial Park to the south, Rio Hondo College to the west, and the Puente Hills Landfill to the north and east.

Elevations on the property range from 570 feet to 621 feet above mean sea level, with a gradual incline to the northeast. An existing water tank known as the Horton Tank currently occupies the northeastern portion of the project area, connected to Observatory Way by an asphalt-paved access road and encircled by approximately 25 feet of asphalt pavement (See Figure 3 – Site Plan). Most of the ground surface in the project area has been previously disturbed.

The climate and environment of the region are typical of southern California's inland valleys, with an average high temperature of 87ºF in August and an average low temperature of 44ºF in December. Rainfall is typically less than 20 inches annually, most of which occurs between November and April. The site has a Mediterranean type climate, with hot dry summers, relatively cool winters and sparse rains. Annual precipitation for the region averages 16.0 inches, and average annual temperature ranges from 49º to 80º F.

1.3 Soils*:*

The soil on the study area are clay loams from the Zaca-Apollo, warm complex.

Zaca-Apollo, warm complex 20 to 55 percent slopes

This soil consists of well drained soils on paralithic bedrock, derived from sand stone and siltstone on summit, shoulder, and backslope formations.

2 ASSESSMENT METHODOLOGY

Data regarding biological resources in the Project APE were obtained through literature review and field investigation. Prior to performing the survey, available databases and documentation relevant to the Project APE were reviewed for documented occurrences of sensitive species in the Project vicinity (approximately 3 miles). The USFWS threatened and endangered species occurrence data overlay, USFWS Information for Planning and Consultation (IPaC) database and the most recent versions of the California Natural Diversity Database (CNDDB) and California Native Plant Society Electronic Inventory (CNPSEI) databases were searched for sensitive species data in the *El Monte* USGS 7.5-Minute Series Quadrangles. These databases contain records of reported occurrences of state and federally listed species or otherwise sensitive species and habitats that may occur within the vicinity of the Project site (approximately 3 miles). Other available technical information on the biological resources of the area was also reviewed including previous surveys and recent findings. See Appendix A for CNDDB Element List and USFWS IPaC Report.

2.1 Biological Resources Assessment

Jacobs biologist Lisa Patterson conducted a biological resources assessment of the Project APE on April 16, 2021. A subsequent focused CAGN study was conducted by biologist Brian Karpman with nine visits between 12/19/2021 and 3/28/2022. The assessment included both desktop review of Google Earth aerial imagery and field survey. The field survey consisted of a reconnaissance-level pedestrian survey of the Project site, as well as the immediate surrounding area where feasible and appropriate. Wildlife species were detected during field survey by sight, calls, tracks, scat, or other sign. In addition to species observed, expected wildlife usage of the site was determined based on known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area. The focus of the faunal species survey was to identify potential habitat for special status wildlife within the Project APE.

2.2 Jurisdictional Delineation

On April 16, 2021, Ms. Patterson also evaluated the Project APE for the presence of riverine/riparian/wetland habitat and jurisdictional waters, i.e. Waters of the U.S. (WOTUS), as regulated by the USACE and RWQCB, and/or jurisdictional streambed and associated riparian habitat as regulated by the CDFW.

Prior to the field visit, aerial photographs of the Project APE were viewed and compared with the surrounding USGS 7.5-Minute Topographic Quadrangle maps to identify drainage features within the survey area as indicated from topographic changes, blue-line features, or visible drainage patterns. The USFWS National Wetland Inventory and Environmental Protection Agency (EPA) Water Program "My Waters" Google Earth Pro data layer were also reviewed to determine whether any hydrologic features and wetland areas had been documented within the vicinity of the site. Similarly, the United States Department of Agriculture (USDA) – Natural Resources Conservation Service (NRCS) Web Soil Survey was reviewed for soil types found within the Project APE to identify the soil series in the area and to check these soils to determine whether they are regionally identified as hydric soils. Upstream and downstream connectivity of waterways (if present) were reviewed on Google Earth Pro aerial photographs and topographic maps to determine jurisdictional status. The lateral extent of potential USACE jurisdiction was measured at the Ordinary High Watermark (OHWM) in accordance with regulations set forth in 33CFR part 328 and the USACE guidance documents listed below:

- *USACE Wetlands Research Program Technical Report Y-87-1 (on-line edition), Wetlands Delineation Manual, Environmental Laboratory, 1987 (Wetland Delineation Manual).*

- *USACE Minimum Standards for Acceptance of Preliminary Wetlands Delineations, November 30, 2001 (Minimum Standards).*
- *USACE Jurisdictional Determination Form Instructional Guidebook, May 30, 2007 (JD Form Guidebook).*
- *USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid Lands, (Version 2.0), May 2010.*
- *USACE A Guide to Ordinary High-Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States, August 2014 (Delineation Manual).*
- *The Environmental Protection Agency (EPA) and the Department of the Army's "Navigable Waters Protection Rule: Definition of 'Waters of the United States,'" April 21, 2020 (effective June 22, 2020) (85 FR 22250).*

To be considered a *jurisdictional wetland* under the federal CWA, Section 404, an area must possess three (3) wetland characteristics: hydrophytic *vegetation*, hydric *soils*, and wetland *hydrology*.

► *Hydrophytic vegetation*: Hydrophytic vegetation is plant life that grows, and is typically adapted for life, in permanently or periodically saturated soils. The hydrophytic vegetation criterion is met if more than 50 percent of the dominant plant species from all strata (tree, shrub, and herb layers) is considered hydrophytic. Hydrophytic species are those included on the *2016 National Wetland Plant List (Western Mountains, Valleys & Coast Region)* (Lichvar, 2016). Each species on the list is rated with a wetland indicator category, as shown below. To be considered hydrophytic, the species must have *wetland indicator status*, i.e., be rated as OBL, FACW or FAC.

Table 1. Wetland Indicator Vegetation Categories

Category	Probability
Obligate Wetland (OBL)	Almost always occur in wetlands (estimated probability >99%)
Facultative Wetland (FACW)	Usually occur in wetlands (estimated probability 67 to 99%)
Facultative (FAC)	Equally likely to occur in wetlands and non-wetlands (estimated probability 34 to 66%)
Facultative Upland (FACU)	Usually occur in non-wetlands (estimated probability 67 to 99%)
Obligate Upland (UPL)	Almost always occur in non-wetlands (estimated probability >99%)

► *Hydric Soil*: Soil maps from the USDA-NRCS Web Soil Survey (USDA 2021) were reviewed for soil types found within the Project APE. Hydric soils are saturated or inundated long enough during the growing season to develop anaerobic conditions that favor growth and regeneration of hydrophytic vegetation. There are several indirect indicators that may signify the presence of hydric soils including hydrogen sulfide generation, the presence of iron and manganese concretions, certain soil colors, gleying, and the presence of mottling. Generally, hydric soils are dark in color or may be gleyed (bluish, greenish, or grayish), resulting from soil development under anoxic (without oxygen) conditions. Bright mottles within an otherwise dark soil matrix indicate periodic saturation with intervening periods of soil aeration. Hydric indicators are particularly difficult to observe in sandy soils, which are often recently deposited soils of flood plains (entisols) and usually lack sufficient fines (clay and silt) and organic material to allow use of soil color as a reliable indicator of hydric conditions. Hydric soil indicators in sandy soils include accumulations of organic matter in the surface horizon, vertical streaking of subsurface horizons by organic matter,

and organic pans.

The hydric soil criterion is satisfied at a location if soils in the area can be inferred or observed to have a high groundwater table, if there is evidence of prolonged soil saturation, or if there are any indicators suggesting a long-term reducing environment in the upper part of the soil profile. Reducing conditions are most easily assessed using soil color. Soil colors are evaluated using the Munsell Soil Color Charts (Gretag/Macbeth, 2000). Soil pits (when necessary) are dug to an approximate depth of 16-20 inches to evaluate soil profiles for indications of anaerobic and redoximorphic (hydric) conditions in the subsurface.

- *Wetland Hydrology*: The wetland hydrology criterion is satisfied at a location based upon conclusions inferred from field observations that indicate an area has a high probability of being inundated or saturated (flooded, ponded, or tidally influenced) long enough during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (USACE, 1987 and 2008b).

Evaluation of CDFW jurisdiction followed guidance in the FGC. Specifically, CDFW jurisdiction would occur where a stream has a definite course showing evidence of where waters rise to their highest level and to the extent of associated riparian vegetation.

3 RESULTS

3.1 Existing Biological and Physical Conditions

The Project APE consists of an approximately 0.6 acre of partially developed land in an unincorporated North Whittier, Los Angeles County, California. The subject property is located along Observatory Road, on the eastern edge of the Rio Hondo College campus, to the north of the Rose Hills Memorial.

The APE is situated on the southern rim of the San Gabriel Valley, a broad inland valley extending from the San Rafael Hills in the west to San Dimas in the east and bounded by the San Gabriel Mountains on the north and the Puente Hills on the south. More specifically, it lies in the northern Puente Hills, surrounded by the Rose Hills Memorial Park to the south, Rio Hondo College to the west, and the Puente Hills Landfill to the north and east. Disturbances on site include roadways, an existing water tank that is routinely maintained, maintained landscape, parking, pedestrian uses, and vegetation clearing. Human disturbances near the Project site consist of those activities associated with the surrounding campus.

3.1.1 Communities occurring on the Project Site

Non-native landscaping.

This vegetation type describes areas dominated by non-native annual grasses, shrubs, and trees, with a large component of ruderal forbs. This non-native vegetation is associated with areas of historic disturbance, vegetation maintenance and plantings. Soils are generally shallow, well-drained sand to fine clay loam. Within the Project site, the dominant species is Caster (*Ricinus communis*), which creates a solid stand to the west of the tank. Other dominant species included brome grasses (*Bromus sp*p.), stork's bill (*Erodium cicutarium*), Maltese star thistle (*Centaurea melitensis*) and slender oat (*Avena barbata*) with an overstory introduced landscaped trees, such as red eucalyptus, lemon-scented eucalyptus, and pepper tree.

Disturbed/developed

A significant portion of the site has been developed as a water tank site which includes the tank site, surrounding asphalt road access road, pipes and gates. The paved surfaces and non-paved surfaces have been heavily compacted by regular vehicle traffic, parking, and foot traffic.

Remnant/Disturbed Chaparral

Chaparral is composed of mid growing, soft, woody, drought-deciduous shrubs and trees that often create a closed canopy that grow on steep usually south-facing slopes, severely drained soils. Species composition and diversity is determined by soil factors, fire, and topography.

The disturbed chaparral occurs in a patchy distribution along the northeastern edge adjacent to Observation Road. This vegetation was dominated by sugar bush (*Malosma laurna*), lemonade sumac (*Rhus integrifolia*), and lilac (*Ceanothus sp.*). A number of other subshrubs species made up most of other cover, with some annual species growing in gaps between perennials. This vegetation is very dense where it occurs on the Project site. (Note: species nomenclature follows Clark (2008))

3.1.2 Wildlife Observed

Wildlife at the study area consisted of common species and species associated with open, disturbed areas. The most abundant species detected during the site visit were birds such as mourning dove (*Zenaida macroura*), house finch (*Carpodacus mexicanus*) and northern mockingbird *(Mimus polyglottos*); and California ground squirrel (*Otospermophilus beecheyi*) (See Table 2 for a list of species observed on the site)

3.1.3 Special Status Species

Based on a review of CNDDB, IPac, other published literature, and field surveys and assessments, a number of special status wildlife species were identified as potentially occurring onsite, six federally/state listed have been identified with potential to occur in the Project vicinity.

No special-status wildlife species were observed on the Project site during the April 2021 site surveys, and there are no historic site records for any special status wildlife species onsite (CNDDB 2020).

The following is the list of special status species with the potential to occur in the Project APE:

- Swainson's hawk (*Buteo swainsoni*) – ST
- Coastal California gnatcatcher (*Polioptila californica californica*) – FT/DCH
- Least Bell's vireo (*Vireo bellii pusillus* – FE/SE
- Southwestern Willow Flycatcher *(Empidonax traillii extimus*) - FE/SE
- Crotch bumble bee (*Bombus crotchii*) - SCE
- Western Yellow-billed cuckoo (*Coccyzus americanus occidentalis)* – FT/SE

Definitions - status: Fed = federal, FE = federal endangered, FT = federal threatened, FPE = federally proposed for listing as endangered, FPT = federally proposed for listing as threatened, FC = federal candidate species, FSC = federal special concern species, state = state of California, SE = state endangered, ST = state threatened, SCE = state candidate for listing as endangered, SCT = state candidate for listing as threatened. MBTA= Migratory Bird Treaty Act protected: SFP=State Fully Protected Species

An analysis of the likelihood for occurrence of all CNDDB and IPac sensitive species documented in the *El Monte* quad is provided in Appendix A. This analysis considers species' range as well as documentation within the vicinity of the Project APE and includes the habitat requirements for each species and the potential for their occurrence on site, based on required habitat elements and range relative to the current site conditions.

3.2 Special Status Plants

There were no listed plant species identified with potential to occur on the Project site, further, due to the disturbances onsite, and being surrounded by the Los Angeles metropolis, no suitable habitat for special status plants species occurs within the Project APE. A complete list of all plant species observed during the field surveys can be found in Table 2.

3.3 Special Status Wildlife

The Proposed Project survey area provides marginal habitat for wildlife. and is marginally suitable for sensitive species known to occur or with potential to occur in the Project survey area. The result of this habitat assessment and survey was that disturbed coastal sage scrub habitat occurs within the Project survey

area. Although the habitat is marginally suitable for CAGN, there is more suitable habitat and historic locations in proximity several hundred feet away. Therefore, a protocol focused CAGN survey was conducted in during the non-breeding season of 2021-2022, and the survey report is attached as Appendix B. There is no suitable habitat for the remaining above listed species on site, and no further surveys are warranted.

The project is located within the mapped federal Designated Critical Habitat of the coastal California gnatcatcher. Although there are remnant patches of native chaparral sage scrub plants, they are sporadically scattered amongst non-native invasive species, and adjacent to existing roads and developed areas; and are unlikely to support sensitive species. Therefore, the APE contains only marginally suitable habitat. Further, no CAGN were detected during the protocol focused survey conducted during the non-breeding season of 2021-2022

Based on the literature search, reconnaissance and habitat assessment surveys, and additional focused biological surveys, several wildlife species are known to occur or have the potential to occur in the Proposed Project survey area.

Wildlife identified in the CNDDB and IPac are discussed in more detail in the following sections because of their state, federal and/or local status, or presence of critical habitat. This next section discusses species with the potential to occur or have been documented within three miles from the project site. No special status wildlife species were observed within the Project APE.

3.3.1 Coastal California Gnatcatcher (*Polioptila californica californica*; FT, DCH, MBTA covered species, SSC)

The Coastal California gnatcatcher is a small blue-gray songbird. It has dark blue-gray feathers on its back and grayish-white feathers on its underside. The wings have a brownish wash to them. Its long tail is mostly black with white outer tail feathers. They have a thin, small bill. The males have a black cap during the summer which is absent during the winter. The gnatcatcher typically occurs in or near sage scrub habitat, which includes the following plant communities as classified by Holland (1986): Venturan coastal sage scrub, Diegan coastal sage scrub, maritime succulent scrub, Riversidean sage scrub, Riversidean alluvial fan sage scrub, southern coastal bluff scrub, and coastal sage-chaparral scrub. Ninety-nine percent of all gnatcatcher locality records occur at or below an elevation of 984 feet.

The Project occurs within designated critical habitat (DCH) for the coastal California gnatcatcher, it appears that there is only marinally suitable habitat for California gnatcatcher within the Project APE. Additionally, historic CNDDB records withing proximity to the Project APE date back to 2012 and the species occurred on the northeastern side of the Puente Hills towards the Whittier Narrows along the transmission line project. A focused presence/absence surveys for coastal California gnatcatcher (*Polioptila californica californica*) was conducted during the non-breeding season of 2021-2022. The result of this focused survey is that this species is absent from the site.

3.3.2 Least Bell's Vireo (*Vireo bellii pusillus*; FE, SE, MBTA covered Species)

The least Bell's vireo (LBVI) is a small, olive-gray migratory songbird that nests and forages almost exclusively in riparian woodland habitats. Bell's vireos as a group are highly territorial and are almost exclusively insectivorous. Least Bell's vireo nesting habitat typically consists of well developed overstory, understory, and low densities of aquatic and herbaceous cover. The understory frequently contains dense sub-shrub or shrub thickets. These thickets are often dominated by plants such as narrow-

leaf willow, mulefat, young individuals of other willow species such as arroyo willow or black willow, and one or more herbaceous species. LBVI generally begin to arrive from their wintering range in southern Baja California and establish breeding territories by mid-March to late-March. A large majority of breeding vireos apparently depart their breeding grounds by the third week of September and only a very few have been found wintering in the United States.

There is no suitable habitat for this specieson or adjacent to the Project site.

3.3.3 Southwestern Willow Flycatcher (*Empidonax traillii extimus*; FE, SE, Covered Species)

Southwestern willow flycatcher is a migratory species which breeds in North America and winters in South and Central America. The species can be typically found in the region from early May to early to mid-September, individuals migrating further north may be seen earlier or later in the year. Southwestern willow flycatchers nest in dense riparian areas. Threats to the species include loss, fragmentation and modification of riparian habitat required for breeding, as well as brood parasitism by brown-headed cowbirds

There is no suitable habitat within the Project APE.

3.3.4 Swainson's Hawk (Buteo swainsoni) – ST, MBTA Covered

Swainson's hawk is a raptor and a medium-sized member of the genus Buteo. It is similar in size to the red-tailed hawk (*B. jamaicensis*). Swainson's hawk inhabits North America mainly in the spring and summer, and winters in South America. Breeding areas include south-central Alberta, central Saskatchewan, southwestern Manitoba, and west and southern Minnesota. They will breed as far north as east-central Alaska, and southwestern Yukon. Breeding continues south through the eastern parts of Washington and Oregon, to the central valley of California, Arizona, New Mexico, Colorado, and most of Texas.

Foraging habitat includes wild prairie, hayfields, and pastures over wheat fields and alfalfa fields. It requires elevated perches for hunting. The breeding distribution of Swainson's hawk is tied very closely to the distribution of various small mammals.

Swainson's hawk may be observed in southern California during the spring and fall migrations, it is not considered a breeding area for this species. Further, due to the urbanization of the Project APE and surrounding areas, it is not likely this area would support migratory rooting or hunting.

3.3.5 Western Yellow-billed cuckoo (*Coccyzus americanus occidentalis*) – FT/SE

Yellow-billed cuckoo is a migratory species which breeds in North America and winters in Central America. The species can be typically found in the region from early May to early/mid-September, individuals migrating further north may be seen earlier or later in the year. Yellow-billed cuckoo nest in riparian areas. Threats to the species include loss, fragmentation and modification of riparian habitat required for breeding, as well as brood parasitism by brown-headed cowbirds.

There is no suitable habitat within the Project APE.

3.3.6 Crotch bumble bee (*Bombus crotchii*) - SCE

Crotch's bumblebee is characterized as a short- or medium- tongue length species. This species could be confused with Bombus caliginosus, Bombus occidentalis, and Bombus vandykei, as they have similar

appearances to Crotch's bumblebee. B. crotchii males are generally present from May to September with their peak occurring in July. Workers of this species are active from April to August and queen bees are active for only two months from March until May; the peak of worker activity is between May and June, while queens reach maximum activity in April. Bees of this species all have a square-shaped face and a rounded ankle on the mid leg. Bumblebee abdomen segments are numbered.

This species lives primarily in California in the United States; inhabited regions of the state include the Mediterranean region, Pacific coast, western desert, great valley, SW foothills. Most observations of this species occur in southern California in coastal areas. The overwintering habitat of this bumblebee is not known, but it is believed that they have similar behaviors to other bumblebees in this respect, overwintering under leaf litter or soft soil. Crotch's bumblebee inhabits grassland and scrub areas, requiring a hotter and drier environment than other bumblebee species, and can only tolerate a very narrow range of climatic conditions. Crotch's bumblebee nests underground, often in abandoned rodent dens. It is a nonmigratory species of bumblebee. Its food plants include milkweeds, dustymaidens, lupines, medics, phacelias, and sages. It also feeds on snapdragons, Clarkia, poppies, and wild buckwheat. Milkweed is a favorite nectar source of Crotch's bumblebee.

This species was not observed during habitat assessment survey. Further, there is only marginal habitat occurring along the road margins. Due to the routine disking, the compaction and the past and currently uses, it is this species is not likely to occur.

3.4 Special Status Habitats

The Project APE does not contain any sensitive habitats. However, it is mapped within the USFWS Designated Critical Habitat for the coastal California gnatcatcher. As discussed above, there are no Primary Constituent Elements of Designated Critical Habitat for this species occurring on the Project site. However, a focused presence/absence surveys for coastal California gnatcatcher (*Polioptila californica californica*) is recommended in order to ensure that the habitat within the project site does not have primary constituent elements that would support the gnatcatcher, and the Project would not contribute to the recovery of the species.

3.5 Jurisdictional Delineation

3.5.1 Waters of the U.S.

The USACE has authority to permit the discharge of dredged or fill material in WOTUS under Section 404 CWA. According to the EPA and the Department of the Army's April 21, 2020 (effective June 22, 2020) "Navigable Waters Protection Rule: Definition of 'Waters of the United States,'" WOTUS are defined as: "The territorial seas and traditional navigable waters; perennial and intermittent tributaries that contribute surface water flow to such waters; certain lakes, ponds, and impoundments of jurisdictional waters; and wetlands adjacent to other jurisdictional waters." (85 FR 22250). The Navigable Waters Protection Rule specifically excludes from the definition of WOTUS:

- "Groundwater, including groundwater drained through subsurface drainage systems.
- ephemeral features that flow only in direct response to precipitation, including ephemeral streams, swales, gullies, rills, and pools.
- diffuse stormwater runoff and directional sheet flow over upland.
- ditches that are not traditional navigable waters, tributaries, or that are not constructed in adjacent wetlands, subject to certain limitations.

- prior converted cropland.
- artificially irrigated areas that would revert to upland if artificial irrigation ceases.
- artificial lakes and ponds that are not jurisdictional impoundments and that are constructed or excavated in upland or non-jurisdictional waters.
- water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel.
- stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off.
- groundwater recharge, water reuse, and wastewater recycling structures constructed or excavated in upland or in non-jurisdictional waters; and
- waste treatment systems." (85 FR 22250).

There are no features within the Project APE that would meet the definition of WOTUS. Therefore, the Project will not result in any impacts (temporary or permanent) to jurisdictional waters subject to regulation by the USACE or RWQCB under Sections 404/401 of the CWA.

USACE Wetlands

Areas meeting all three wetland parameters (i.e. hydrophitic vegetation, hydric soils and wetland hydrology) and are adjacent to other jurisdictional waters would be designated as USACE wetlands. Hydrophitic vegetation, hydric soil indicators and wetland hydrology are absent from the Project APE. Therefore, the Project site does not meet all three wetland characteristics and does not contain any USACE wetlands.

Waters of the State

The Project APE does not contain any lakes, streams or riparian/riverine habitats subject to regulation by the CDFW under Section 1602 of the FGC, or by the RWQCB under the Porter Cologne Water Quality Control Act and the Project will not result in any impacts (temporary or permanent) to "waters of the State".

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 Sensitive Biological Resources

The BRA surveys were conducted by Jacobs in April 2021 to identify potential habitat for special status wildlife within the Project APE. No special status wildlife species, including state and/or federally listed threatened or endangered species, were observed within the Project APE during the reconnaissance-level assessment survey and none are expected to occur. Due to the environmental conditions on site and the adjacent disturbances, the Project APE is likely not suitable to support any of the special status wildlife species that have been documented in the Project vicinity (within approximately 3 miles).

The Project APE contains only marginally suitable habitat for coastal California gnatcatcher. No other sensitive habitats, including any USFWS primary constituent elements for the designated Critical Habitat for any federally listed species, and the Project will not result in adverse modification of Critical Habitat. However, a focused presence/absence surveys for coastal California gnatcatcher (*Polioptila californica californica*) has been conducted, and the species is absent from the site. Given the species is absent and the habitat is marginally suitable, the site not contribute to the recovery of the species.

Nesting Birds

There is habitat within the Project APE that is suitable to support nesting birds, including both natural and urban environments. Most native bird species are protected from unlawful take by the MBTA. In December 2017, the Department of the Interior (DOI) issued a memorandum concluding that the MBTA's prohibitions on take apply "[…] only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs" (DOI 2017). Then in April 2018, the USFWS issued a guidance memorandum that further clarified that the take of migratory birds or their active nests (i.e., with eggs or young) that is incidental to, and not the purpose of, an otherwise lawful activity does not constitute a violation of the MBTA (USFWS 2018).

However, the State of California provides additional protection for native bird species and their nests in the FGC (Appendix B). Bird nesting protections in the FGC include the following (Sections 3503, 3503.5, 3511, 3513 and 3800):

- Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.
- Section 3503.5 prohibits the take, possession, or needless destruction of any nests, eggs, or birds in the orders Falconiformes (new world vultures, hawks, eagles, ospreys, and falcons, among others), and Strigiformes (owls).
- Section 3511 prohibits the take or possession of Fully Protected birds.
- Section 3513 prohibits the take or possession of any migratory nongame bird or part thereof, as designated in the MBTA. To avoid violation of the take provisions, it is generally required that Project-related disturbance at active nesting territories be reduced or eliminated during the nesting cycle.
- Section 3800 prohibits the take of any non-game bird (i.e., bird that is naturally occurring in California that is not a gamebird, migratory game bird, or fully protected bird).

In general, impacts to all bird species (common and special status) can be avoided by conducting work

outside of the nesting season, which is generally March 15t through September 1st. However, if all work cannot be conducted outside of nesting season, the following is recommended:

- To avoid impacts to nesting birds (common and special status) during the nesting season, (generally March 15 to September 1 for most species and February 1 to August 1 for raptor species)a qualified Biologist should conduct pre-construction nesting bird surveys prior to Project-related disturbance to suitable nesting areas to identify any active nests. If no active nests are found, no further action would be required. If an active nest is found, the biologist should set no-work buffers around the nest. The extent of the buffer would be based upon the species nesting, its sensitivity to disturbance, nesting stage, and expected types, intensity and duration of disturbance. The nest(s) and buffer zones should be field checked weekly by a qualified biological monitor. The approved no-work buffer zone should be clearly marked in the field, within which no disturbance activity should commence until the qualified biologist has determined the young birds have successfully fledged and the nest is inactive.

4.2 Jurisdictional Waters

In addition to the BRA and focused botanical field survey, Jacobs also assessed the Project APE for the presence of any state and/or federal jurisdictional waters. The result of the jurisdictional waters assessment is that there are no wetland or non-wetland WOTUS or waters of the State potentially subject to regulation by the USACE under Section 404 of the CWA, the RWQCB under Section 401 of the CWA and/or Porter Cologne Water Quality Control Act, or the CDFW under Section 1602 of the California Fish and Game Code (FGC), respectively, within the Project site. Therefore, the Project will not impact and jurisdictional waters and no state or federal jurisdictional waters permitting will be required.

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Table 2 –
Species List

Plant species detected at the Project site, 2021

SCIENTIFIC NAME (SYNONYM)	COMMON NAME
ARECACEAE	**PALM FAMILY**
Washingtonia robusta	Fan Palm
ANGIOSPERMAE	**FLOWERING PLANTS**
ANGIOSPERMS - DICOTYLEDONES	**DICOTS**
ADOXACEAE	**MUSKROOT FAMILY**
Sambucus nigra spp. caerulea	Blue Elderberry
ANACARDIACEAE	**CASHEW AND SUMAC FAMILY**
Molosma laurina	Laurel Sumac
Rhus integrifolia	Lemonade Berry
ASTERACEAE	**SUNFLOWER FAMILY**
Ambrosia acanthicarpa	Sand-bur or Annual Bur-sage
Artemisia californica	California Sagebrush
Helianthus annuus	Western Sunflower
Heterotheca grandiflora	Telegraph Weed
Gnaphalium californicum	California Everlasting
BORAGINACEAE	**BORAGE FAMILY**
Cryptantha microstachys	Tejon Cat's-Eyes
Phacelia distans	Common Phacelia
BRASSICACEAE	**MUSTARD FAMILY**
Brassica nigra	Black mustard
Hirschfeldia incana	Shortpod or Summer Mustard
EUPHORBIACEAE	**SPURGE FAMILY**
Croton californicus	California Croton
Croton setiger	Doveweed, Turkey Mullein
Ricinus communis	Caster Bean
FABACEAE	**LEGUME FAMILY**
Lotus scoparius	Deerweed
FAGACEAE	**OAK FAMILY**
Quercus berberidifolia	Scrub Oak
GERANIACEAE	**GERANIUM FAMILY**
*Erodium cicutarium**	Red-Stemmed Filaree
LAMIACEAE	**MINT FAMILY**
*Marrubium vulgare**	Common Horehound
Salvia columbariae	Chia
MYRTACEAE	**MYRTLE FAMILY**
*Eucalyptus camaldulensis**	River Red Gum
Eucalyptus citriodora	Lemon-scented Gum
ONAGRACEAE	**EVENING PRIMROSE FAMILY**
Camissoniopsis bistorta	California or Southern Sun Cup
Camissonia campestris subsp. *campestris*	Field primrose
Camissoniopsis hirtella	Field Sun Cup
POLYGONACEAE	**BUCKWHEAT FAMILY**
Eriogonum fasciculatum	California Buckwheat

ROSACEAE	**ROSE FAMILY**
Adenostoma fasciculatum	Chamise
SOLANACEAE	**NIGHTSHADE FAMILY**
Datura wrightii	Western Jimsonweed
*Nicotiana glauca**	Tree Tobacco
ZYGOPHYLLACEAE	**CALTROP FAMILY**
*Tribulus terrestris**	Puncture Vine
ANGIOSPERMS - MONOCOTYLENDONES	**MONOCOTS**
AGAVACEAE	**AGAVE FAMILY**
POACEAE	**GRASS FAMILY**
*Avena barbata**	Slender Wild Oat
*Bromus diandrus**	Common Ripgut Grass
*Bromus madritensis ssp. rubens**	Foxtail Chess or Red Brome
*Hordeum murinum ssp. leporinum**	Hare Barley or Foxtail Barley

KEY: Asterisk (*) = non-native species or cultivated; $^{+}$ = sensitive species; ** = planted in landscaped area only. Sources: Taxonomy; Common names and non-native species designations according to Clark 2008

Wildlife species detected at the Project site, 2021

FAMILY/SPECIES NAME	COMMON NAME
REPTILIA	**REPTILES**
PHRYNOSOMATIDAE	**ZEBRA-TAILED, EARLESS, FRING-TOED, SPINY, TREE, SIDE-BLOTCHED AND HORNED LIZARDS**
Sceloporus occidentalis	Western Fence Lizard
AVES	**BIRDS**
AEGITHALIDAE	**LONG-TAILED TITS**
Psaltriparus minimus	Bushtit
ODONTOPHORIDAE	**NEW WORLD QUAIL**
Callipepla californica	California Quail
ACCIPITRIDAE	**HAWKS, KITES, EAGLES AND ALLIES**
Accipter cooperii	Cooper's Hawk
Buteo jamaicensis	Red-tailed Hawk
Buteo lineatus	Red-Shouldered Hawk
COLUMBIDAE	**PIGEONS AND DOVES**
Zenaida macroura	Mourning Dove
PARULIDAE	**WOOD WARBLERS**
Setophaga coronate	Yellow-rummped Warbler
TROCHILIDAE	**HUMMINGBIRDS**
Calypte anna	Anna's Hummingbird
TURDIDAE	**THRUSHES**
Turdus migratorius	American Robin
TYRANNIDAE	**TYRANT FLYCATCHERS**
Sayornis nigricans	Black Phoebe
Myiarchus cinerascens	Ash-throated Flycatcher
Tyrannus vociferans	Cassin's Kingbird
VIREONIDAE	**VIREOS**
Vireo huttoni	Hutton's Vireo
CORVIDAE	**JAYS AND CROWS**
Aphelocoma californica	California Scrub-Jay

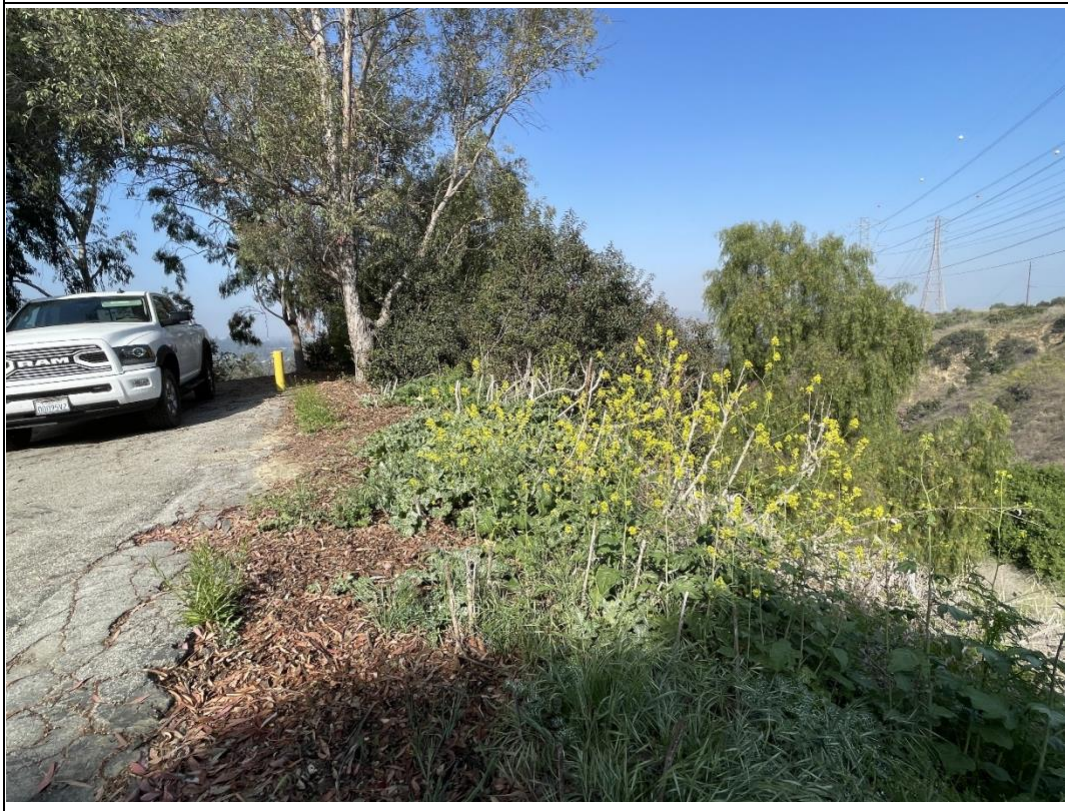
TROGLODYTIDAE	**WRENS**
Troglodytes aedon	House Wren
SYLVIIDAE	**SYLVIID WARBLERS**
Chamaea fasciata	Wrentit
MIMIDAE	**MOCKINGBIRDS AND THRASHERS**
Mimus polyglottos	Northern Mockingbird
STURNIDAE	**STARLINGS**
Sturnus vulgaris	European Starling
EMBERIZIDAE	**EMBERIZIDS**

Melozone crissalis	California Towhee
ICTERIDAE	**BLACKBIRDS**
Icterus cucullatus	Hooded Oriole
FRINGILLIDAE	**FRINGILLINE AND CARDUELINE FINCHES**
Haemorhous mexicanus	House Finch
Spinus psaltria	Lesser Goldfinch
PASSERIDAE	**OLD WORLD SPARROWS**
Passer domesticus	House Sparrow
Zonotrichai leucophrys	White-crowned Sparrow
MAMMALIA	**MAMMALS**
SCIURIDAE	**SQUIRRELS, CHIPMUNKS & MARMOTS**
Otospermophilus beecheyi	California Ground Squirrel
CANIDAE	**FOXES, WOLVES & RELATIVES**
Canis latrans	Coyote

Table 2
Site Photographs

	Photo 1. View of western end of the tank site looking east
	Photo 2. View from the tank site, of the western edge, looking west

	Photo 3: View of access road and construction area on the south. View from the tan site to the east
	Photo 4: View of southern parking and staging area to the south. View from the access road.

	Photo 5: View of the eastern side of the tank site from the eastern side.
	Photo 6: View of the northern side of the tank from east of the tank.

Appendix A – CNDDB/IPAC

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (El Monte (3411811))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Calochortus plummerae Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
Calochortus weedii var. intermedius intermediate mariposa-lily	PMLIL0D1J1	None	None	G3G4T2	S2	1B.2
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Cuscuta obtusiflora var. glandulosa Peruvian dodder	PDCUS01111	None	None	G5T4?	SH	2B.2
Dudleya multicaulis many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
Glyptostoma gabrielense San Gabriel chestnut	IMGASB1010	None	None	G2	S2	
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G3G4	S4	
Phacelia stellaris Brand's star phacelia	PDHYD0C510	None	None	G1	S1	1B.1

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
Ribes divaricatum var. parishii Parish's gooseberry	PDGRO020F3	None	None	G5TX	SX	1A
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Scutellaria bolanderi ssp. austromontana southern mountains skullcap	PDLAM1U0A1	None	None	G4T3	S3	1B.2
Spea hammondii western spadefoot	AAABF02020	None	None	G2G3	S3	SSC
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

Record Count: 27

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

IPaC will be unavailable starting at 15:00 MDT for 10-15 minutes and you will be required to log back in. We apologize for any inconvenience. ×

This re abitat (collec jurisdi The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Los Angeles County, California



Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

http://www.fws.gov/carlsbad/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

NOT FOR CONSULTATION

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS

Coastal California Gnatcatcher Polioptila californica californica Wherever found There is **final** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo Vireo bellii pusillus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5945	Endangered

Flowering Plants

NAME	STATUS
Nevin's Barberry Berberis nevinii Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8025	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Coastal California Gnatcatcher Polioptila californica californica https://ecos.fws.gov/ecp/species/8178#crithab	Final

NOT FOR CONSULTATION

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NOT FOR CONSULTATION

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Burrowing Owl Athene cunicularia — Breeds Mar 15 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9737

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jan 1 to Dec 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Costa's Hummingbird Calypte costae — Breeds Jan 15 to Jun 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9470

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Long-billed Curlew Numenius americanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

NOT FOR CONSULTATION

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Rufous Hummingbird selasphorus rufus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/4243

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Whimbrel Numenius phaeopus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9483

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

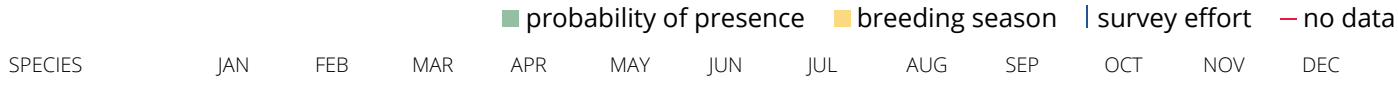
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

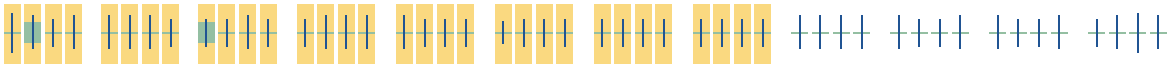
NOT FOR CONSULTATION



Allen's Hummingbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Bald Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



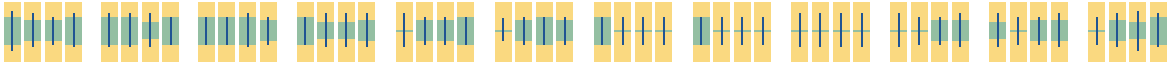
Burrowing Owl BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



California Thrasher BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Clark's Grebe BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



NOT FOR CONSULTATION

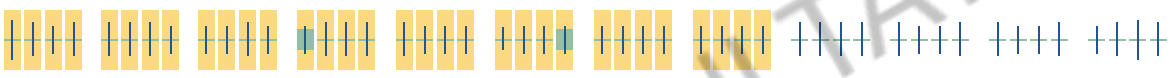
Common Yellowthroat BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



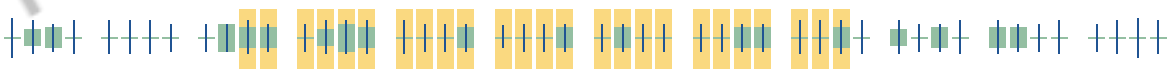
Costa's Hummingbird BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Golden Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Lawrence's Goldfinch BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



NOT FOR CONSULTATION

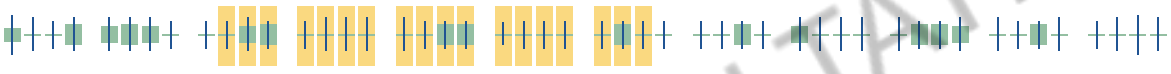
Long-billed Curlew BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Nuttall's Woodpecker BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Oak Titmouse BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



DO NOT FOR CONSULTATION

SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Rufous Hummingbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



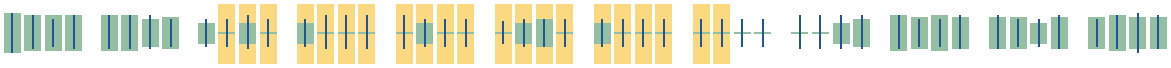
Song Sparrow BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Spotted Towhee BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



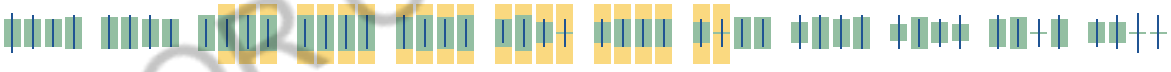
Tricolored Blackbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Whimbrel BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Wrentit BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



NOT FOR CONSULTATION

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

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Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Appendix B –
Focused CAGN
2021-2022

April 11, 2022

Stacy Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
22177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Subject: 45-Day —Presence/Absence Surveys for Coastal California Gnatcatcher (*Polioptila californica*) for Plant No. 7 Reservoir Project, Rio Hondo College – Unincorporated North Whittier, CA, Los Angeles County, California. Survey Conducted on behalf of San Gabriel Valley Water Company.

This letter and attached information is intended to satisfy the 45-day reporting requirements for the 2021-2022 non-breeding season presence/absence surveys for coastal California gnatcatcher (*Polioptila californica californica*) conducted by Brian Karpman in support of Tom Dodson & Associates, at the request of the San Gabriel Valley Water Company. Below you will find a summary of the survey methods, results, and attached maps of the survey area in Figures 1, 2 and 3.

Venandi Inc was retained by Tom Dodson & Associates to conduct coastal California gnatcatcher non-breeding season protocol surveys for the San Gabriel Valley Water Company's Plant No. 7 Reservoir Project. The project is located at an existing water storage site adjacent to an access road on the western boundaries of Rio Hondo College, the primary address for which is 3600 Workman Mill Road, Whittier, CA 90601. The nearest cross street is South Drive and Circle Drive. The proposed project is located within the unincorporated County of Los Angeles. The project is located within the USGS Topo 7.5-minute map for El Monte, CA, and is located in Section 3, Township 2 South and Range 11 West. The approximate GPS coordinates of the project site are 34.019242, -118.027665.

San Gabriel Valley Water Company requires the construction of a second reservoir at the existing Plant No. 7 site to enable San Gabriel to provide additional, necessary water storage required at Rio Hondo College to meet Rio Hondo College's existing water demands for domestic uses, fire suppression, and emergency needs. The second reservoir will also allow for the existing reservoir to be taken out of service when required for routine maintenance.

SGVWC proposes to install the new reservoir on the opposite side of the access road from the existing reservoir location. SGVWC considered other locations adjacent to the existing reservoir (shown below) as part of their planning process, but ultimately chose a site location south of the existing reservoir due to the minimal limits of construction and other favorable factors that would result from developing the reservoir at this site location.

Survey Methods

Tom Dodson & Associates provided maps of the project site to Briana Karpman. The survey area was just over 2 acers of habitat. The habitat within the project area was dominated by black mustard with a mix of chaparral and mustard with a small component of coastal sage scrub. The surrounding area to the north, outside of the proposed footprint had a significant amount of coastal sage scrub and was surveyed as well. The project location was bordered by a steep slope to the north and a cemetery to the south.

The Presence/absence surveys for coastal California Gnatcatcher summarized in this report were conducted by permitted biologists: Brian Karpman (USFWS 10(A) permit number: TE – 01768B-1). Focused surveys were conducted according to the USFWS presence/absence survey protocol published in 1997. Nine focused surveys were conducted between December 19, 2021 and March 28, 2022. The surveys were conducted between 7:00 AM and 12:00 PM avoiding inclement weather that could affect target species detection. Recorded vocalizations were played in suitable habitat and discontinued if coastal California Gnatcatchers were located or potential predators were present. All bird species were detected were recorded; see the species list in Appendix B.

Table A – Survey Information

Survey Date	CAGN Survey #	Start Time	End Time	Air Temp. (F)	Cloud Cover	Wind Speed (MPH)
12/19/2021	1	11:00 am	11:55 am	64 F	0%	1-3 MPH
1/3/2022	2	9:10 am	10:10 am	52 F	0%	0 MPH

1/18/2022	3	7:00 am	8:00 am	51 F	40%	0 MPH
1/31/2022	4	8:10 am	9:30 am	49 F	40%	0 MPH
2/14/2022	5	8:00 am	9:30 am	54 F	40%	0-2 MPH
2/28/2022	6	7:20 am	8:30 am	61 F	0%	1-2 MPH
3/14/2022	7	9:45 am	7:00 am	60 F	0%	0-2 MPH
3/21/2022	8	7:30 am	8:40 am	54 F	0%	0 MPH
3/28/2022	9	7:00 am	8:10 am	57 F	100%	2-4 MPH

Survey Results

Permitted biologist Brian Karpman did not detect coastal California Gnatcatchers during the survey.

Conclusions

Coastal California gnatcatchers were not present in the San Gabriel Valley Water Company Plant No 7 Project work area at that time of surveys. The habitat within the project site was dominated by tall mustard and sparse chaparral throughout. The potential of the coastal California gnatcatcher utilizing the area was low. In the surrounding areas several hundred feet away, more suitable habitat for the coastal California gnatcatcher could be seen. It is possible for coastal California gnatcatchers to use the site but it would most likely just be moving through.

Please do not hesitate to contact me with any questions. Sincerely,

Brian Karpman
714 454 7784
(USFWS 10(A) permit number: TE – 01768B-1

Appendix A
Bird Species Observed

Cooper's Hawk – *Accipiter cooperii*
Red-tailed Hawk – *Buteo jamaicensis*
Red Shouldered Hawk – *Buteo lineatus*
Anna's Hummingbird – *Calypte anna*
California Scrub Jay – *Aphelocoma californica*
Bushtit – *Psaltriparus minimus*
American Robin – *Turdus migratorius*
Yellow-rumped Warbler – *Steophaga coronate*
White-crowned Sparrow – *Zonotrichia Leucophrys*
House Finch – *Haemorhous mexicanus*

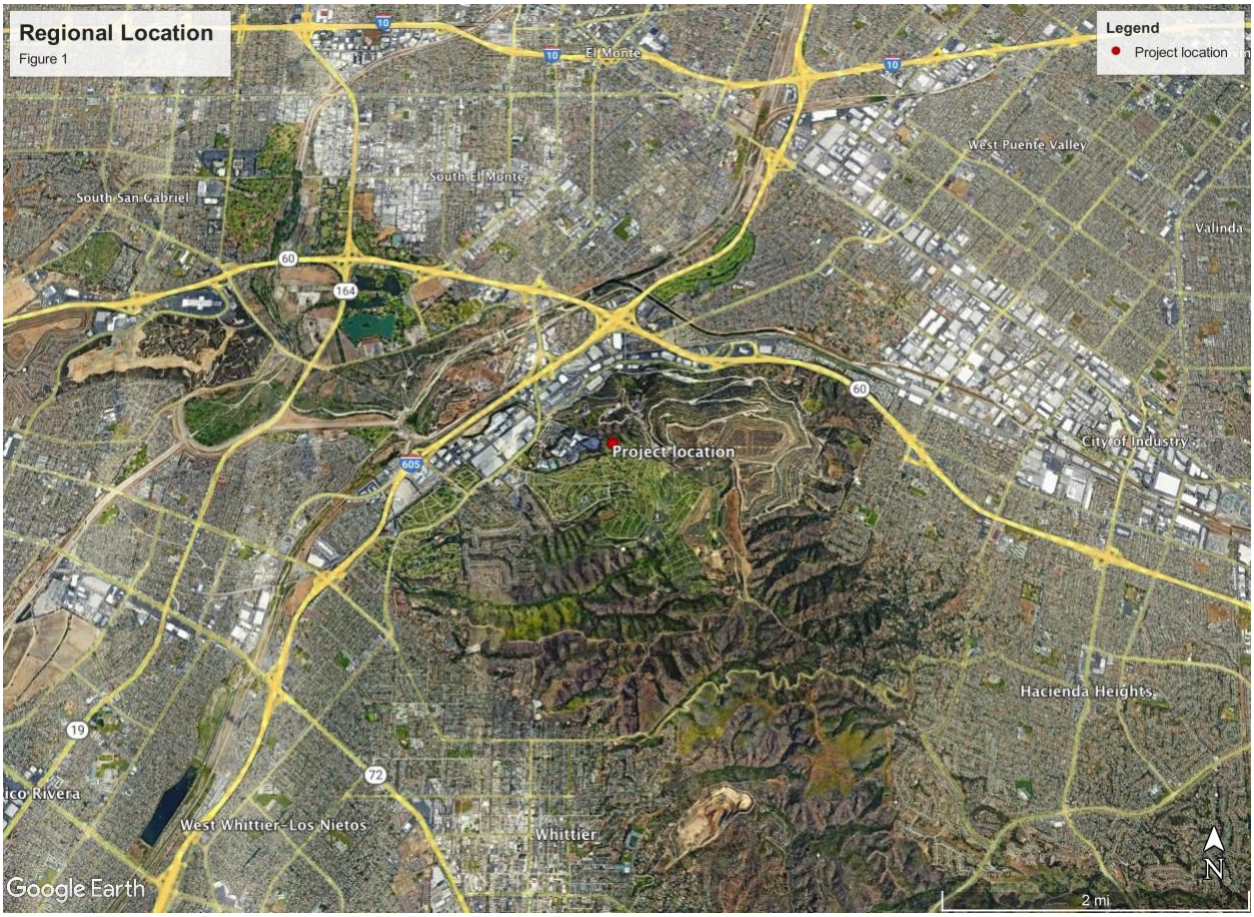


Figure 1 Regional Map



Figure 2 Site Location Map

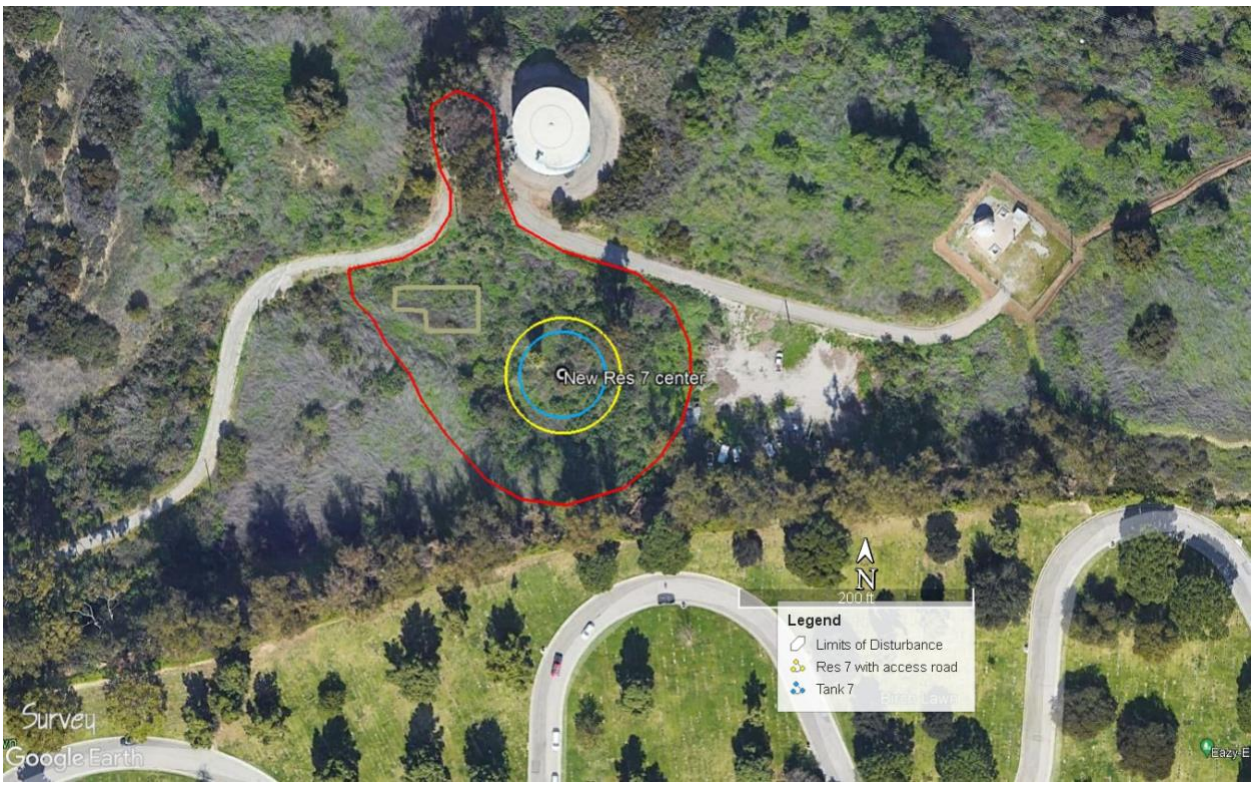


Figure 3 Project site

Appendix C
Regulatory Framework

REGULATORY FRAMEWORK

Federal Regulations

Clean Water Act

The purpose of the Clean Water Act (CWA) of 1977 is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into "waters of the United States" without a permit from the United States Army Corps of Engineers (USACE). The definition of waters of the United States includes rivers, streams, estuaries, territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Regulations [CFR] 328.3 7b). The U.S. Environmental Protection Agency (EPA) also has authority over wetlands and may override a USACE permit. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; in California this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

Federal Endangered Species Act (ESA)

The federal Endangered Species Act (ESA) of 1973 protects plants and wildlife that are listed by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) as endangered or threatened. Section 9 of the ESA (USA) prohibits the taking of endangered wildlife, where taking is defined as any effort to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law (16 United States Code [USC] 1538). Under Section 7 of the ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect an endangered species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided the action will not jeopardize the continued existence of the species. The ESA specifies that the USFWS designate habitat for a species at the time of its listing in which are found the physical or biological features "essential to the conservation of the species," or which may require "special Management consideration or protection..." (16 USC § 1533[a][3].2; 16 USC § 1532[a]). This designated Critical Habitat is then afforded the same protection under the ESA as individuals of the species itself, requiring issuance of an Incidental Take Permit prior to any activity that results in "the destruction or adverse modification of habitat determined to be critical" (16 USC § 1536[a][2]).

Interagency Consultation and Biological Assessments

Section 7 of ESA provides a means for authorizing the "take" of threatened or endangered species by federal agencies, and applies to actions that are conducted, permitted, or funded by a federal agency. The statute requires federal agencies to consult with the USFWS or National Marine Fisheries Service (NMFS), as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. If a Proposed Project "may affect" a listed species or destroy or modify critical habitat, the lead agency is required to prepare a biological assessment evaluating the nature and severity of

the potential effect.

Habitat Conservation Plans

Section 10 of the federal ESA requires the acquisition of an Incidental Take Permit (ITP) from the USFWS by non-federal landowners for activities that might incidentally harm (or "take") endangered or threatened wildlife on their land. To obtain a permit, an applicant must develop a Habitat Conservation Plan that is designed to offset any harmful impacts the proposed activity might have on the species.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 U.S.C. Sections 661 to 667e et seq.) applies to any federal Project where any body of water is impounded, diverted, deepened, or otherwise modified. Project proponents are required to consult with the USFWS and the appropriate state wildlife agency.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (The Eagle Act) (1940), amended in 1962, was originally implemented for the protection of bald eagles (*Haliaeetus leucocephalus*). In 1962, Congress amended the Eagle Act to cover golden eagles (*Aquila chrysaetos*), a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. This act makes it illegal to import, export, take (molest or disturb), sell, purchase, or barter any bald eagle or golden eagle or part thereof. The golden eagle, however, is accorded somewhat lighter protection under the Eagle Act than that of the bald eagle.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 implements international treaties between the United States and other nations created to protect migratory birds, any of their parts, eggs, and nests from activities, such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR Part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code (CFGC).

However, on December 22, 2017 the U.S. Department of the Interior (DOI) issued a memorandum concluding that MBTA's prohibitions on take apply "[…] only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs" (DOI 2017). Therefore, take of migratory birds or their active nests (i.e., with eggs or young) that is incidental to, and not the purpose of, an otherwise lawful activity does not constitute a violation of the MBTA. Then, on April 11, 2018, the USFWS issued a guidance memorandum that provided further clarification on their interpretation:

> "We interpret the M-Opinion to mean that the MBTA's prohibitions on take apply when the purpose of an action is to take migratory birds, their eggs, or their nests. Conversely, the take of birds, eggs or nests occurring as the result of an activity, the purpose of which is not to take birds, eggs or nests, is not prohibited by the MBTA" (USFWS 2018).

Therefore, the MBTA is currently interpreted to prohibit the take of birds, nests or eggs when the *purpose*

or *intent* of the action is to take birds, eggs or nests, not when the take of birds, eggs or nests is incidental to but not the intended purpose of an otherwise lawful action.

Executive Orders (EO)

> *Invasive Species – EO 13112 (1999)*: Issued on February 3, 1999, promotes the prevention and introduction of invasive species and provides for their control and minimizes the economic, ecological, and human health impacts that invasive species cause through the creation of the Invasive Species Council and Invasive Species Management Plan.
>
> *Migratory Bird – EO 13186 (2001)*: Issued on January 10, 2001, promotes the conservation of migratory birds and their habitats and directs federal agencies to implement the Migratory Bird Treaty Act. Protection and Enhancement of Environmental Quality—EO 11514 (1970a), issued on March 5, 1970, supports the purpose and policies of the National Environmental Policy Act (NEPA) and directs federal agencies to take measures to meet national environmental goals.

Migratory Bird Treaty Reform Act

The Migratory Bird Treaty Reform Act (Division E, Title I, Section 143 of the Consolidated Appropriations Act, 2005, PL 108–447) amends the Migratory Bird Treaty Act (16 U.S.C. Sections 703 to 712) such that nonnative birds or birds that have been introduced by humans to the United States or its territories are excluded from protection under the Act. It defines a native migratory bird as a species present in the United States and its territories as a result of natural biological or ecological processes. This list excluded two additional species commonly observed in the United States, the rock pigeon (*Columba livia*) and domestic goose (*Anser domesticus*).

Birds of Conservation Concern

Birds of Conservation Concern (BCC) is a USFWS list of bird species identified to have the highest conservation priority, and with the potential for becoming candidates for listing as federally threatened or endangered. The chief legal authority for BCC is the Fish and Wildlife Conservation Act of 1980 (FWCA). Other authorities include the FESA, the Fish and Wildlife Act of 1956, and the Department of the Interior U.S Code (16 U.S.C. § 701). The 1988 amendment to the FWCA (Public Law 100-653, Title VIII) requires the Secretary of the Interior, through the USFWS, to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973" (USFWS, 2008a).

State Regulations

California Fish and Game Code Sections 1600 through 1606 of the CFGC

This section requires that a Streambed Alteration Application be submitted to the CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the Department and the applicant is the Streambed Alteration Agreement. Often, Projects that require a Streambed Alteration Agreement also require a permit from the USACE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the Streambed Alteration Agreement may overlap.

California Endangered Species Act

The California Endangered Species Act (CESA) (Sections 2050 to 2085) establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats by protecting "all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation." Animal species are listed by the CDFW as threatened or endangered, and plants are listed as rare, threatened, or endangered. However, only those plant species listed as threatened or endangered receive protection under the California ESA.

CESA mandates that state agencies do not approve a Project that would jeopardize the continued existence of these species if reasonable and prudent alternatives are available that would avoid a jeopardy finding. There are no state agency consultation procedures under the California ESA. For Projects that would affect a species that is federally and State listed, compliance with ESA satisfies the California ESA if the California Department of Fish and Wildlife (CDFW) determines that the federal incidental take authorization is consistent with the California ESA under Section 2080.1. For Projects that would result in take of a species that is state listed only, the Project sponsor must apply for a take permit, in accordance with Section 2081(b).

Fully Protected Species

Four sections of the California Fish and Game Code (CFGC) list 37 fully protected species (CFGC Sections 3511, 4700, 5050, and 5515). These sections prohibit take or possession "at any time" of the species listed, with few exceptions, and state that "no provision of this code or any other law will be construed to authorize the issuance of permits or licenses to 'take' the species," and that no previously issued permits or licenses for take of the species "shall have any force or effect" for authorizing take or possession.

Bird Nesting Protections

Bird nesting protections (Sections 3503, 3503.5, 3511, 3513 and 3800) in the CFGC include the following:

- Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.
- Section 3503.5 prohibits the take, possession, or needless destruction of any nests, eggs, or birds in the orders Falconiformes (new world vultures, hawks, eagles, ospreys, and falcons, among others), and Strigiformes (owls).
- Section 3511 prohibits the take or possession of Fully protected birds.
- Section 3513 prohibits the take or possession of any migratory nongame bird or part thereof, as designated in the MBTA. To avoid violation of the take provisions, it is generally required that Project-related disturbance at active nesting territories be reduced or eliminated during the nesting cycle.
- Section 3800 prohibits the take of any any non-game bird (i.e., bird that is naturally occurring in California that is not a gamebird, migratory game bird, or fully protected bird)

Native Plant Protection Act

The Native Plant Protect Act (NPPA) (1977) (CFGC Sections 1900-1913) was created with the intent to "preserve, protect, and enhance rare and endangered plants in this State." The NPPA is administered by CDFW. The Fish and Game Commission has the authority to designate native plants as endangered or rare and to protect endangered and rare plants from take. CESA (CFGC 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the Fish and Game Code

APPENDIX 2b

April 11, 2022

Stacy Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
22177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Subject: 45-Day —Presence/Absence Surveys for Coastal California Gnatcatcher (*Polioptila californica*) for Plant No. 7 Reservoir Project, Rio Hondo College – Whittier, CA, Los Angeles County, California. Survey Conducted on behalf of San Gabriel Valley Water Company.

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Survey Methods

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The Presence/absence surveys for coastal California Gnatcatcher summarized in this report were conducted by permitted biologists: Brian Karpman (USFWS 10(A) permit number: TE – 01768B-1). Focused surveys were conducted according to the USFWS presence/absence survey protocol published in 1997. Nine focused surveys were conducted between December 19, 2021 and March 28, 2022. The surveys were conducted between 7:00 AM and 12:00 PM avoiding inclement weather that could affect target species detection. Recorded vocalizations were played in suitable habitat and discontinued if coastal California Gnatcatchers were located or potential predators were present. All bird species were detected were recorded; see the species list in Appendix B.

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3/14/2022	7	9:45 am	7:00 am	60 F	0%	0-2 MPH
3/21/2022	8	7:30 am	8:40 am	54 F	0%	0 MPH
3/28/2022	9	7:00 am	8:10 am	57 F	100%	2-4 MPH

Survey Results

Permitted biologist Brian Karpman did not detect coastal California Gnatcatchers during the survey.

Conclusions

Coastal California gnatcatchers were not present in the San Gabriel Valley Water Company Plant No 7 Project work area at that time of surveys. The habitat within the project site was dominated by tall mustard and sparse chaparral throughout. The potential of the coastal California gnatcatcher utilizing the area was low. In the surrounding areas several hundred feet away, more suitable habitat for the coastal California gnatcatcher could be seen. It is possible for coastal California gnatcatchers to use the site but it would most likely just be moving through.

Please do not hesitate to contact me with any questions. Sincerely,

Brian Karpman
714 454 7784
(USFWS 10(A) permit number: TE – 01768B-1

Appendix A
Bird Species Observed

Cooper's Hawk – *Accipiter cooperii*
Red-tailed Hawk – *Buteo jamaicensis*
Red Shouldered Hawk – *Buteo lineatus*
Anna's Hummingbird – *Calypte anna*
California Scrub Jay – *Aphelocoma californica*
Bushtit – *Psaltriparus minimus*
American Robin – *Turdus migratorius*
Yellow-rumped Warbler – *Steophaga coronate*
White-crowned Sparrow – *Zonotrichia Leucophrys*
House Finch – *Haemorhous mexicanus*

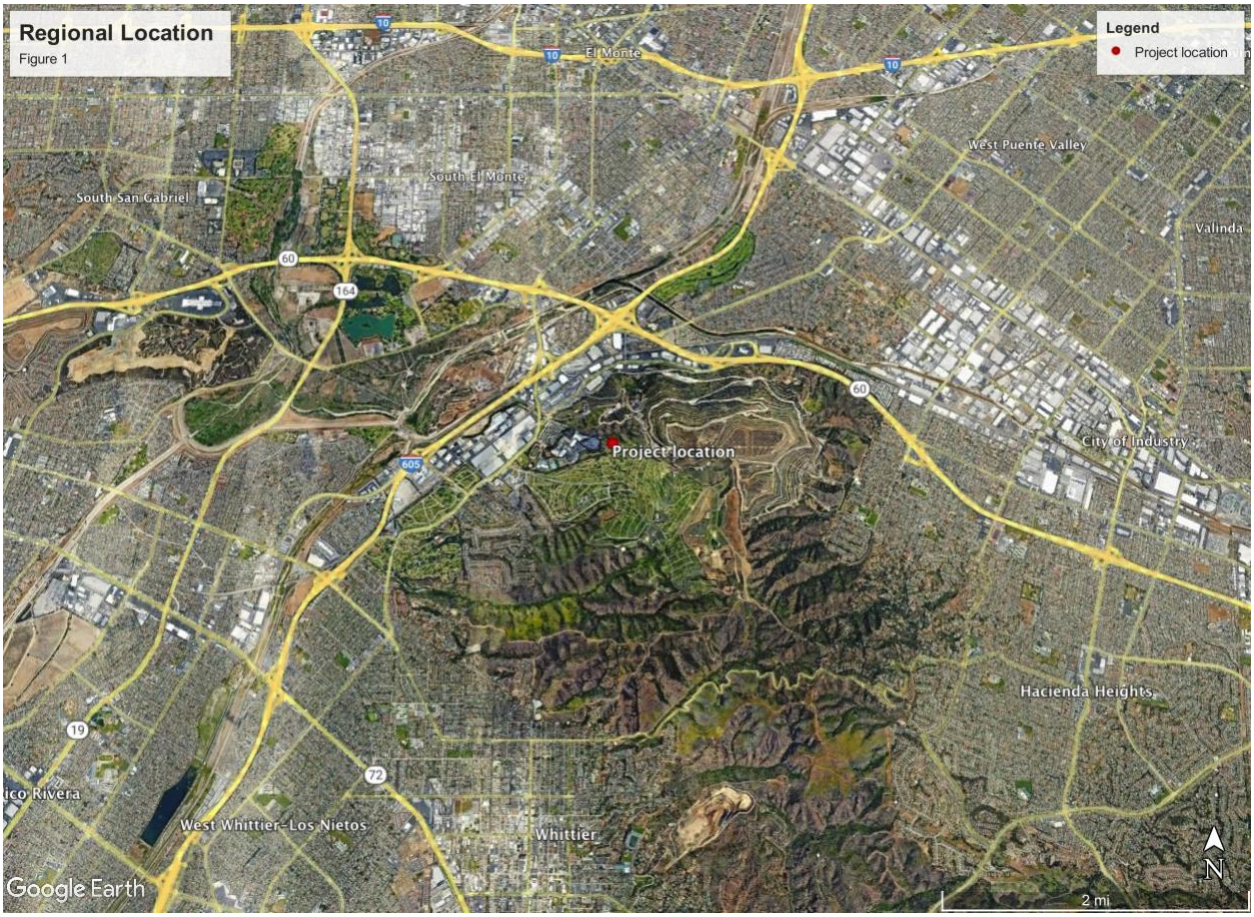


Figure 1 Regional Map



Figure 2 Site Location Map

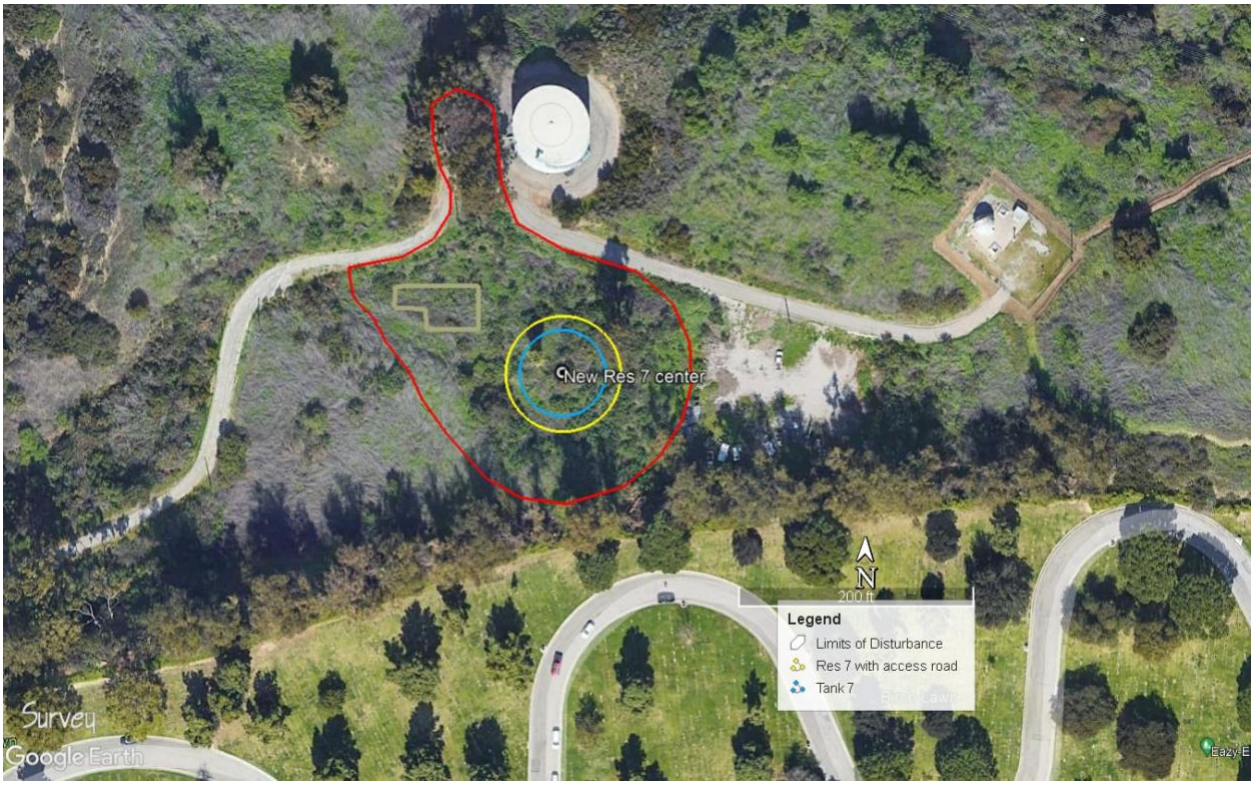


Figure 3 Project site

APPENDIX 3a

HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY REPORT

SAN GABRIEL VALLEY WATER COMPANY
PLANT NO. 7 RESERVOIR PROJECT

Near the City of Whittier
Los Angeles County, California

Prepared for:

Tom Dodson & Associates
2150 North Arrowhead Avenue,
San Bernardino, CA 92405
and
San Gabriel Valley Water Company
11142 Garvey Avenue,
El Monte, CA 91733

Prepared by:

CRM TECH
1016 East Cooley Drive, Suite A/B
Colton, CA 92324

Bai "Tom" Tang, Principal Investigator
Michael Hogan, Principal Investigator

May 29, 2021
CRM TECH Contract No. 3705

Title: Historical/Archaeological Resources Survey Report: San Gabriel Valley Water Company Plant No. 7 Reservoir Project, near the City of Whittier, Los Angeles County, California

Authors: Bai "Tom" Tang, Principal Investigator/Historian
John J. Eddy, Archaeologist/Report Writer
Nina Gallardo, Archaeologist

Consulting Firm: CRM TECH
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(909) 824-6400

Date: May 29, 2021

Prepared for: Tom Dodson & Associates
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and
San Gabriel Valley Water Company
11142 Garvey Avenue
El Monte, CA 91733
(626) 448-6183

USGS Quadrangle: El Monte, Calif., 7.5' quadrangle; fractional Section 3, T2S R11W, San Bernardino Baseline and Meridian

Project Size: Approximately 0.6 acre

Keywords: San Gabriel Valley; Puente Hills; Phase I cultural resources survey; Horton Tank, circa 1964-1966; no "historical resources" under CEQA

EXECUTIVE SUMMARY

Between February and May 2021, at the request of Tom Dodson & Associates, CRM TECH performed a cultural resources study on approximately 0.6 acre of partially developed land in an unincorporated area near the City of Whittier, Los Angeles County, California. The subject property of the study is located along Observatory Road, on the eastern edge of the Rio Hondo College campus, to the north of the Rose Hills Memorial Park, and within fractional Section 3 of T2S R11W, San Bernardino Baseline and Meridian.

The study is part of the environmental review process for the San Gabriel Valley Water Company's (SGVWC) Plant No. 7 Reservoir Project, which entails primarily the installation of a new 0.6-million-gallon water storage tank measuring 60 feet in diameter and 40 feet in height. Associated improvements proposed at the project site would include piping, grading and pavement for the reservoir foundation, realignment of a segment of Observatory Way, and construction of a retaining wall and wrought iron fences around the perimeter.

As the project proponent, the SGVWC initiated the study per requirement of the Rio Hondo College District (RHCD), lead agency for the project, and in compliance with the California Environmental Quality Act (CEQA; PRC §21000, et seq.). The purpose of this study is to provide the SGVWC and the RHCD with the necessary information and analysis to determine whether the project may cause a substantial adverse change to any "historical resources," as defined by CEQA, that may exist within or adjacent to the project area.

Toward this purpose, CRM TECH initiated a historical/archaeological resources records search and a Native American Sacred Lands File search, pursued historical background research, and carried out an intensive-level field survey. The research results indicate that an existing water tank at the project site, known as the Horton Tank, dates to the 1964-1966 construction of Rio Hondo College. Because it is historical (i.e., more than 50 years) in age, Plant No. 7 Reservoir was recorded into the California Historical Resources Inventory during this study. As a minor component of the campus and a common, utilitarian feature of the late-historic-period infrastructure, however, the tank does not appear eligible for listing in the California Register of Historical Resources, either individually or as a part of Rio Hondo College. Therefore, it does not meet the statutory definition of a "historical resource" for CEQA-compliance purposes.

No other potential cultural resources were encountered within or adjacent to the project area throughout the course of this study. Based on these findings, CRM TECH recommends to the SGVWC and the RHCD a conclusion of *No Impact* regarding "historical resources." No further cultural resources investigation is recommended for the project unless construction plans undergo such changes as to include areas not covered by this study. However, if buried cultural materials are encountered during any earth-moving operations associated with the project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

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INTRODUCTION

Between February and May 2021, at the request of Tom Dodson & Associates, CRM TECH performed a cultural resources study on approximately 0.6 acre of partially developed land in an unincorporated area near the City of Whittier, Los Angeles County, California (Fig. 1). The subject property of the study is located along Observatory Road, on the eastern edge of the Rio Hondo College campus, to the north of the Rose Hills Memorial Park, and within fractional Section 3 of T2S R11W, San Bernardino Baseline and Meridian (Figs. 2, 3).

The study is part of the environmental review process for the San Gabriel Valley Water Company's (SGVWC) Plant No. 7 Reservoir Project, which entails primarily the installation of a new 0.6-million-gallon water storage tank measuring 60 feet in diameter and 40 feet in height. Associated improvements proposed at the project site would include piping, grading and pavement for the reservoir foundation, realignment of a segment of Observatory Way, and construction of a retaining wall and wrought iron fences around the perimeter.

As the project proponent, the SGVWC initiated the study per requirement of the Rio Hondo College District (RHCD), lead agency for the project, and in compliance with the California Environmental Quality Act (CEQA; PRC §21000, et seq.). The purpose of this study is to provide the SGVWC and the RHCD with the necessary information and analysis to determine whether the project may cause a substantial adverse change to any "historical resources," as defined by CEQA, that may exist within or adjacent to the project area.

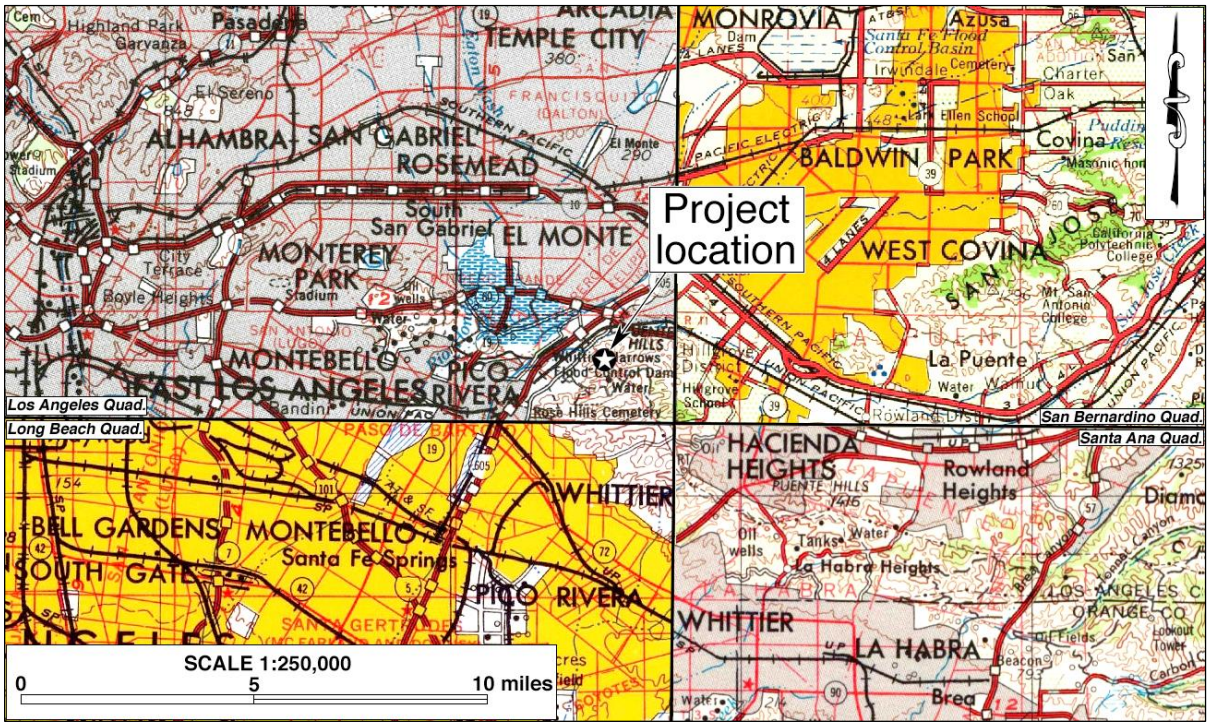


Figure 1. Project vicinity. (Based on USGS 1969-1979)

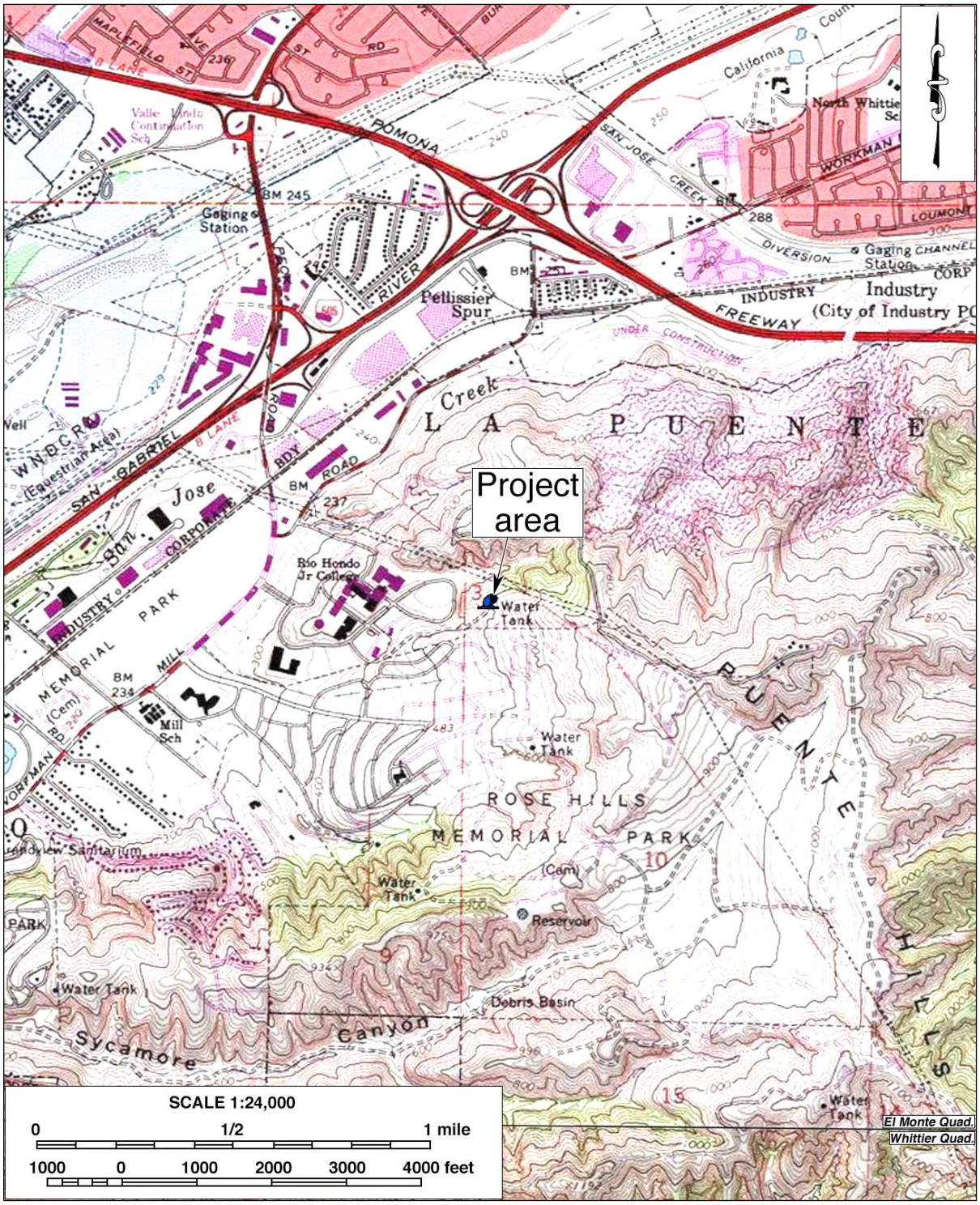


Figure 2. Project area. (Based on USGS 1981-1994])

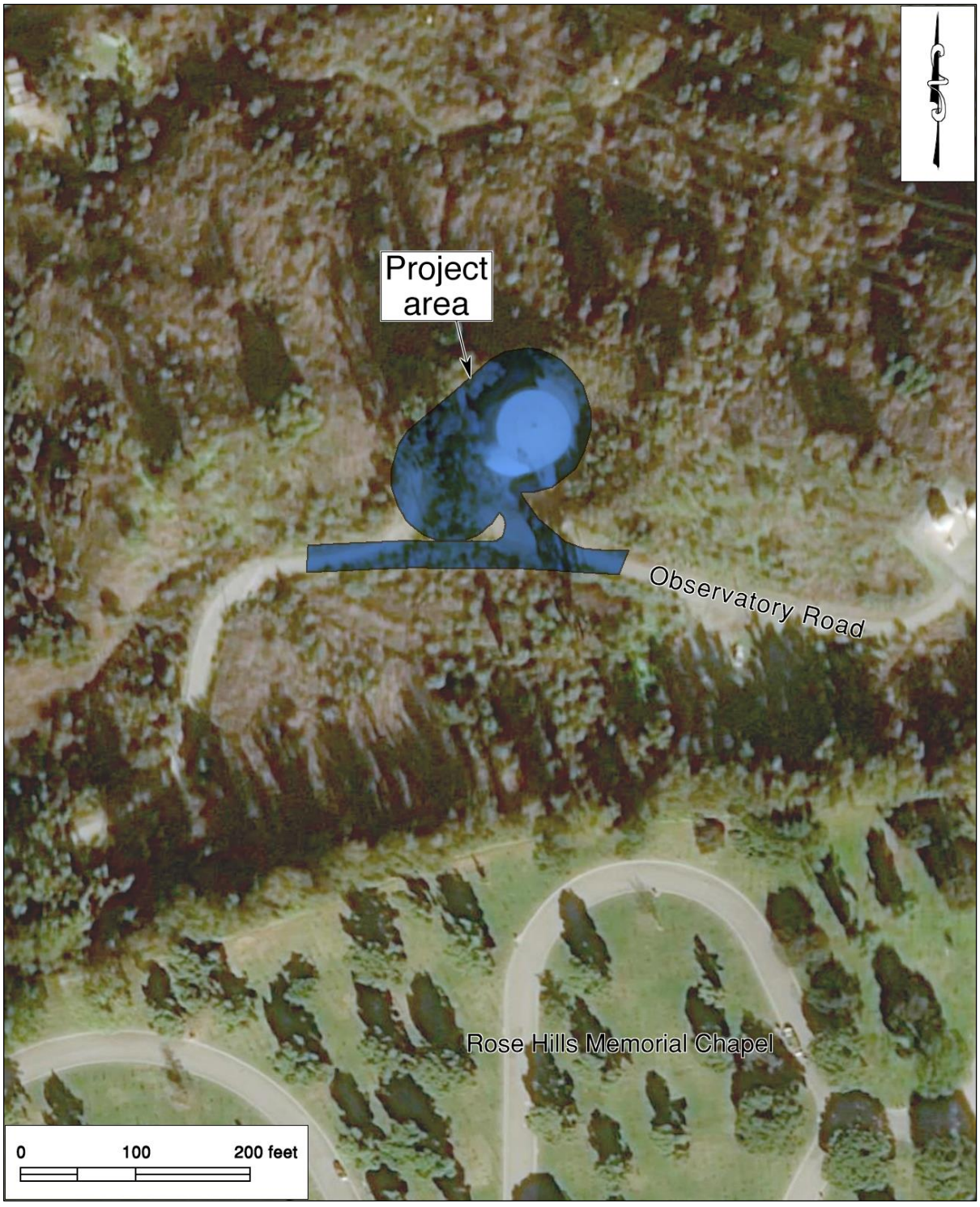


Figure 3. Aerial image of the project area.

Toward this purpose, CRM TECH initiated a historical/archaeological resources records search and a Native American Sacred Lands File search, pursued historical background research, and carried out an intensive-level field survey. This technical report is a complete account of the methods and results of the investigation. Personnel who participated in the study are named in the appropriate sections and their qualifications are presented in Appendix 1.

SETTING

CURRENT NATURAL SETTING

The project area is situated on the southern rim of the San Gabriel Valley, a broad inland valley extending from the San Rafael Hills in the west to San Dimas in the east and bounded by the San Gabriel Mountains on the north and the Puente Hills on the south. More specifically, it lies in the northern Puente Hills, surrounded by the Rose Hills Memorial Park to the south, Rio Hondo College to the west, and the Puente Hills Landfill to the north and east.

Elevations on the property range from 570 feet to 621 feet above mean sea level, with a gradual incline to the northeast. An existing water tank known as the Horton Tank currently occupies the northeastern portion of the project area, connected to Observatory Way by an asphalt-paved access road and encircled by approximately 25 feet of asphalt pavement (Figs. 3, 4). Most of the ground surface in the project area is previously disturbed.



Figure 4. Overview of the current natural setting in the project area. (Photograph taken on March 23, 2021; view to the north)

The climate and environment of the region are typical of southern California's inland valleys, with an average high temperature of 87º (Fahrenheit) in August and an average low temperature of 44º in December. Rainfall is typically less than 20 inches annually, most of which occurs between November and April. Vegetation observed in and near the project area was composed of various shrubs, vines, grasses, and introduced landscaped trees, such as red eucalyptus, white eucalyptus, and palm (Fig. 4).

CULTURAL SETTING

Prehistoric Context

Major archaeological frameworks for southern California's coastal region, including Los Angeles County and more specifically the San Gabriel Valley, were proposed by Wallace (1955) and Warren (1968). The frameworks were broad in scope, extending from Santa Barbara in the north to San Diego in the south, with significant contributions from excavations in Los Angeles County, including Topanga Canyon (e.g., Heizer and Leimert 1947; Johnson 1966; Treganza 1950; Treganza and Malamud 1950; Treganza and Bierman 1958), Malaga Cove (Walker 1937; 1951), and Big Tujunga Wash (Walker 1951).

Wallace (1955) identified the earliest regional cultural phenomenon as "Horizon I. Early Man" associated with terminal Pleistocene to Early Holocene San Dieguito campsites and Level 1 of Malaga Cove overlooking Redondo Beach near Los Angeles. Archaeological assemblages included flake knives, convex-based projectile points, flake scrapers, cores and hammers, abalone shells with asphaltum, spire-lopped Olivella shell beads, clam disk beads, incised stones, bone points, harpoon barbs, spatulae, and beads, and emphasized by the absence of ground stone tools. The Early Man Horizon was followed by "Horizon II. Millingstone Horizon" and extended from 8,000 years before present (BP) to 1,000 BP. This horizon was characterized by the extensive use of groundstone tools and a lack of well-made projectile points.

Wallace defined "Horizon III. Intermediate Cultures" as a gap between the groundstone assemblages and rich elaborate artifact assemblages associated with "Horizon IV. Late Prehistoric Cultures." It is characterized by the presence of the mortar and pestle, diverse and plentiful lithic assemblages including stemmed projectile points, the occasional use of soapstone and asphaltum, and relatively low frequencies of bone tools and personal ornaments. Complex assemblages, a greater degree of craftsmanship, and intensively occupied settlements distinguish Late Prehistoric Cultures from Intermediate Cultures. This includes the increased use of bow and arrow weapons systems, stemless projectile points, soapstone and pottery vessels, shell fishhooks, perforated stones, asphaltum, bone tools, personal adornments, and more elaborate mortuary customs.

Warren (1968) later envisioned the Millingstone Horizon as a cultural tradition, which he termed "Encinitas," that was subdivided into regional expressions or "patterns." This represented a significant shift in perspective among southern California archaeologists from an emphasis on chronology, or time periods, to archaeological entities or cultures. The concept was adopted by many researchers as a generalized expression for the early period of southern California prehistory, while regional expressions, such as the Topanga Complex, fell out of use (Sutton and Gardner 2010:1). More recently, Sutton and Gardner (*ibid.*) reintroduced the idea of regional expressions

within the Encinitas Tradition by identifying several patterns (i.e., Topanga, La Jolla, Greven Knoll, and Pauma) further subdivided into phases. They define "pattern" after Warren et al. (2008:17) to "denote units of cultural similarity in traits that include technology, settlement pattern, mortuary practice, and the like" (Sutton and Gardner 2010:2). "Phase," on the other hand, designates subdivisions within a pattern earmarked by specific changes in the material assemblage. The San Gabriel Valley, in this scheme, would fall within the Topanga Pattern of the Encinitas Tradition, subdivided into three phases (Table 1).

Table 1. Marker Traits of Patterns and Phase within the Encinitas Tradition of Southern California

Pattern	Phase	Dates (BP)	Material Culture Traits	Other Traits
Topanga	Topanga III	3,500 to 2,000	Abundant manos and metates, continuing increase in mortars and pestles, wider variety of small projectile points, stone-lined earthen ovens	Hunting and gathering important, flexed inhumations (some under rock cairns), cremations rare, possible subsistence focus on yucca and/or agave.
	Topanga II	5,000 to 3,500	Still abundant but fewer manos and metates, adoption of mortars and pestles, smaller points, cogged stones, late discoidals, fewer scraper planes and core tools, some stone balls, and charmstones	Shellfish important, addition of acorns, reburial of long bones only and addition of flexed inhumations (some beneath metate cairns), cremations rare
	Topanga I	8,500 to 5,000	Abundant manos and metates, many core tools and scraper planes/scrapers, charmstones, cogged stones, early discoidals, few but large points, faunal remains rare	Shellfish and hunting important, secondary burials under metate cairns (some with long bones only), a few extended inhumations, no cremations.

Based on Sutton and Gardner 2010:Table 1.

In similar fashion, Sutton (2010:1-7) proposed a new "Del Rey Tradition" in place of Wallace's (1955) Intermediate and Late Prehistoric Culture horizons, which he associated with the arrival of Takic speaking peoples in the Los Angeles Basin circa 3,500 BP. Although the antiquity of Takic presence into the region is a subject of debate, a definite change in the material assemblages associated with the transition from Encinitas to Intermediate is apparent. The Del Rey Tradition is subdivided into two geographic patterns, Angeles and Island. The San Gabriel Valley would fall within the Angeles pattern of the Del Rey Tradition, which is subdivided into six phases (Table 2).

Ethnohistoric Context

The San Gabriel Valley was a part of the traditional homeland of the Gabrielino, a Takic-speaking people considered to be the most populous and most powerful ethnic group in aboriginal southern California (Bean and Smith 1978:538). The Gabrielino's territory was centered in the Los Angeles Basin, but stretched from San Clemente Island to the present-day San Bernardino-Riverside area and south into southern Orange County, and commanded influence as far as the San Joaquin Valley, the Colorado River, and Baja California. Today, the leading ethnographic sources on Gabrielino culture are Bean and Smith (1978), Miller (1991), and McCawley (1996).

According to archaeological record, the Gabrielino were not the first inhabitants of the Los Angeles Basin, but arrived around 500 B.C., slowly replacing the indigenous Hokan speakers. As early as 1542, the Gabrielino were in contact with the Spanish during the historic expedition of Juan

Table 2. Traits, Patterns and Phases within the Del Rey Tradition of Southern California				
Pattern	**Phase**	**Dates (BP)**	**Material Culture Traits**	**Other Traits**
Angels	Angeles VI	450 to 150	Addition of Euroamerican material culture (i.e., glass beads and metal tools), locally made pottery, metal needle-drilled Olivella beads	Change of settlement pattern, movement close to missions and ranches; use of domesticated species; flexed primary inhumations continue, cremations uncommon to the north but somewhat more common to the south; apparent adoption of Chingichngish religion
	Angeles V	800 to 450	Trade of steatite artifacts from southern Channel Islands becomes more intensive and extensive, with the addition or increase in more and larger artifacts, such as vessels and comals; larger and more elaborate effigies	Strengthening of ties, especially trade, with southern Channel Islands; expansion into the northern Santa Ana Mountains and San Juaquin Hills
	Angeles IV	1,250 to 800	Cottonwood points appear; some imported pottery appears; birdstone effigies at the beginning of the phase and "Wallace spike" effigies dropped by the end of the phase; possible appearance of ceramic pipes	Change in settlement pattern to fewer but larger permanent villages; flexed primary inhumations continue; cremations uncommon
	Angeles III	1,600 to 1,250	Appearance of bow and arrow technology (e.g., Marymount or Rose Spring points); changes in Olivella beads; asphaltum becomes important; reduction in obsidian use; Obsidian Butte obsidian replaces Coso	Larger seasonal villages; flexed primary inhumations but no extended inhumations and an increase in cremations; appearance of obsidian grave goods; possible expansion into eastern Santa Monica Mountains; replacing Topanga III
	Angeles II	2,600 to 1,600	Continuation of basic Angeles I material culture with the addition of mortuary features containing broken tools and fragmented cremated human bone; fishhooks become more common	Continuation of basic Angeles I settlement and subsistence systems; appearance of a new funerary complex
	Angeles I	3,500 to 2,600	Appearance of Elko dart points and an increase in the overall number of projectile points from Encinitas components; beginning of large-scale trade in small steatite artifacts (effigies, pipes, beads) and Olivella shell beads from the southern Channel Islands; appearance of single-piece shell fishhooks and bone harpoon points; Coso obsidian becomes important; appearance of donut stones	Appearance of a new biological population, apparent population increase; fewer and larger sites along the coast; collector strategy; less overall dependence on shellfish but fishing and terrestrial hunting more important; appearance of flexed and extended inhumations without cairns, cremations uncommon.

Based on Sutton 2010:Table 1

Rodríguez Cabrillo. However, it was not until 1769 that the Spaniards took steps to colonize Gabrielino territory, with cataclysmic effect. Most of the Gabrielino people were incorporated into Mission San Gabriel and other missions in southern California. Due to introduced diseases, dietary deficiencies, and forceful reduction, Gabrielino population dwindled rapidly, and by 1900 they had

almost ceased to exist as a culturally identifiable group (Bean and Smith 1978:540). In recent decades, however, there has been a renaissance of Native American activism and cultural revitalization among several groups of Gabrielino descendants.

The Puente Hills were likely a named place known to Native American inhabitants of the San Gabriel Valley, and its aboriginal name may have been recorded in the notes of John P. Harrington. In the general vicinity of the project area, the Whittier-Los Nietos area was home to the Gabrielino villages of *Chokiishnga* and *Huutnga* and a named place *Curunga*, known historically as "Pico Crossing," the site of an 1847 battle between Californio and American forces during the Mexican-American War (McCawly 1996:58; see also O'Neil 1987:59).

Historic Context

In 1771, two years after the beginning of Spanish colonization of Alta California, Mission San Gabriel was established in the Whittier Narrows area. After repeated flood damages, the mission was moved to its present location in San Gabriel in 1775, thus ending Whittier's brief tenure as the missionary and administrative center of the Los Angeles Basin. After Mexico gained independence from Spain in 1822 and began to secularize the mission system in Alta California in 1834, the Whittier area was divided among several land grants created in the 1830s-1840s. As elsewhere in Alta California during this "rancho" period, cattle raising was the predominant economic activity on these land grants. Because of the presence of these land grants, cattle ranching continued to prevail in the area well after the U.S. annexation of Alta California in 1848, as the influx of homesteaders had to settle elsewhere on public land (Roberts and Brock 1987:12-13).

As the large landholdings were gradually divided, small grain farms became prevalent in the San Gabriel Valley (Hogan and Becker 1999:31). In the late 19th and early 20th centuries, farmers in the Whittier area turned their attention to more lucrative cash crops, most notably English walnut and citrus fruits (*ibid.*). Beginning in the 1910s, amid the petroleum boom that swept through coastal southern California, the hills around Whittier were transformed into an oil field, where a number of companies drilled and operated numerous wells (*ibid.*:31-33).

Meanwhile, the abundance of open land in the area attracted dairy farmers, whose exodus from Los Angeles characterized Whittier history in the 1920s-1930s. In 1949, however, all of these diverse economic pursuits came to a halt around the project location when the U.S. Army Corps of Engineers launched the Whittier Narrows Dam Project that, when completed in 1957, turned the Whittier Narrows into an uninhabited flood-control basin. In 1958, development of recreational facilities began in the basin, which eventually produced the present-day Whittier Narrows Recreational Area.

Closer to the project location, Rio Hondo College, named after the nearby river, was established in the early 1960s. In 1960, the Rio Hondo College District was created for that purpose on the basis of the Whittier Union High School District, and the college officially opened its doors in 1963 (Rio Hondo College n.d.[a]). Initially conducting classes on the campuses of local high schools, the college had its own campus built to the west of the project location in 1964-1966 (*ibid.*). Today, it is one of the 116 accredited campuses of the California Community Colleges system and enrolls approximately 20,000 students per semester (*ibid.*).

RESEARCH METHODS

HISTORICAL/ARCHAEOLOGICAL RESOURCES RECORDS SEARCH

The historical/archaeological resources records search for this study was completed on March 17, 2021, by the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS). Located at California State University, Fullerton, the SCCIC is the official repository of cultural resource records for the County of Los Angeles. During the records search, SCCIC staff examined digital maps, records, and databases for previously identified cultural resources and existing studies within a one-mile radius of the project area. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or Los Angeles County Historical Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

SACRED LANDS FILE SEARCH

On February 16, 2021, CRM TECH submitted a written request to the State of California Native American Heritage Commission (NAHC) for a records search in the commission's Sacred Lands File. The NAHC is the State of California's trustee agency for the protection of "tribal cultural resources," as defined by California Public Resources Code §21074, and is tasked with identifying and cataloging properties of Native American cultural value, including places of special religious, spiritual, or social significance and known graves and cemeteries throughout the state. The NAHC's reply is summarized in the sections below and attached in its entirety to this report in Appendix 2.

HISTORICAL BACKGROUND RESEARCH

Historical background research for this study was conducted by CRM TECH principal investigator/ historian Bai "Tom" Tang. Sources consulted during the research included published literature in local and regional history, U.S. General Land Office (GLO) land survey plat map dated 1867-1868, U.S. Geological Survey (USGS) topographic maps dated 1900-1994, and aerial photographs taken in 1948-2019. The historic maps are available at the websites of the USGS and the U.S. Bureau of Land Management, and the aerial photographs are available at the Nationwide Environmental Title Research (NETR) Online website and through the Google Earth software.

FIELD SURVEY

On March 23, 2021, CRM TECH archaeologist Nina Gallardo (see App. 1 for qualifications) carried out the field survey of the project area. The survey was completed at an intensive level by walking a series of parallel 15-meter (approximately 50-foot) transects over the entire property except where the transects were obstructed by the existing water tank. In this way, the ground surface in the project area was systematically and carefully examined for any evidence of human activities dating to the prehistoric or historic period (i.e., 50 years or older). Visibility of the native ground surface ranged from poor (0%) where pavement or vegetation completely obscured the surface to excellent (100%) where vegetation was sparse or completely cleared.

RESULTS AND FINDINGS

HISTORICAL/ARCHAEOLOGICAL RESOURCES RECORDS SEARCH

According to records on file at the SCCIC, the project area had not been surveyed for cultural resources prior to this study. Within the one-mile scope of the records search, 46 area-specific cultural resource studies have been reported to the SCCIC, collectively covering approximately 45 percent of the total surface area. These studies resulted in the identification of eight built-environment cultural resources from the historic period within the one-mile radius. No prehistoric—i.e., Native American—cultural resources were previously identified in the project vicinity.

The eight known cultural resources include segments of four linear infrastructure features that each extend dozens or hundreds of miles in total length, namely the Union Pacific Railroad (19-0186112), the Los Angeles Department of Water and Power Boulder Transmission Lines (19-188983), the Southern California Edison Mesa-Walnut 220 kV Transmission Line (19-190505), and the Southern California Edison Walnut-Hillgen-Industry-Mesa-Reno 66 kV Transmission Line (19-190508). The other four resources represent a Cold War-era Nike air defense missile site (19-188496) and three buildings or groups of buildings, namely the Rio Hondo Community College Wray Theater (19-190620), a 1960s commercial building at 255 Pellissier Place (19-192814), and the 1960s office complex of the Sanitation Districts of Los Angeles County (19-192828).

Among these previously recorded cultural resources, the nearest ones are the two Southern California Edison Company transmission lines, both of them running approximately 300 feet to the northeast of the project location. Since none of these resources were found within or immediately adjacent to the project boundaries, none of them require further consideration during this study.

SACRED LANDS FILE SEARCH

The NAHC completed a Sacred Lands File search and responded in writing on March 1, 2021. The letter states that the results of the search were positive for Native American cultural resources and refers further inquiries to the Gabrieleno Band of Mission Indians–Kizh Nation. In addition, the NAHC recommends that other local Native American groups be consulted as well and provided a referral list of eight individuals affiliated with seven Native American tribal organizations. The commission's reply is attached to this report in Appendix 2 for reference by the SGVWC and the RHCD in future consultations.

HISTORICAL BACKGROUND RESEARCH

Historical maps and aerial photographs consulted for this study indicate no notable human-made features in the immediate vicinity of the project area until the construction of the existing Horton Tank, evidently as a part of the overall project that established the Rio Hondo College campus a few hundred feet to the west in 1964-1966 (Figs. 5-9; NETR Online 1948-1964). As late as sometime in 1964, when the campus construction was well underway, the natural landscape around the project location remained largely unaltered (NETR Online 1964). A dedication plaque on the Horton Tank demonstrates that its construction was completed later that year by the Chicago Bridge & Iron Company of Oak Brook, Illinois.

Known today as CB&I, a part of McDermott International, Inc., the Chicago Bridge & Iron Company was founded in 1889 as a bridge design and construction firm, but it soon shifted its focus to bulk liquid storage in the late 19th and early 20th centuries, coinciding with the western expansion of railroads across the United States and the discovery of oil in the southwest (CompaniesHistory.com n.d.). The company gained worldwide prominence in the petroleum industry during the 1920s-1930s and, over the years, achieved a number of widely acclaimed distinctions in the field, such as the world's largest steel water reservoir in 1986 (*ibid.*; McDermott n.d.). The Horton Tank, rather than a specific name, in fact refers to a type of steel storage tanks that the company manufactured in the mid-20th century and named after its founder, Horace Ebenezer Horton (1843-1912; CompaniesHistory.com n.d.).

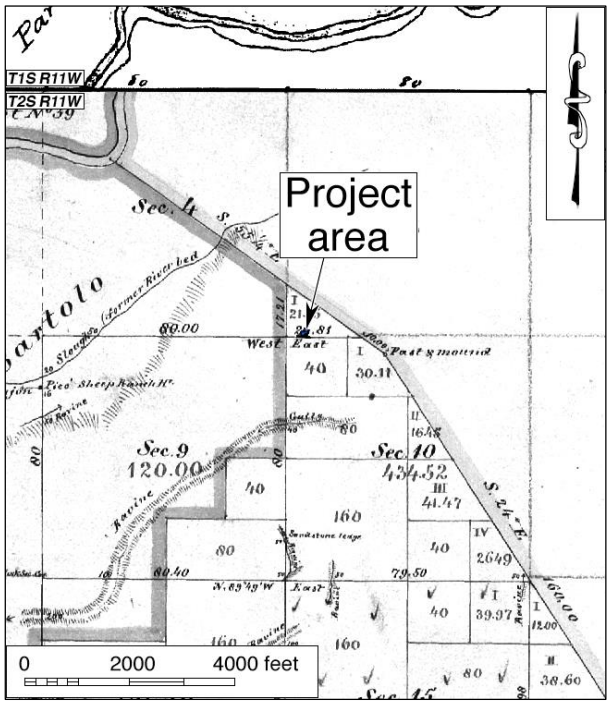


Figure 5. The project area and vicinity in 1853-1868. (Source: GLO 1867; 1868)

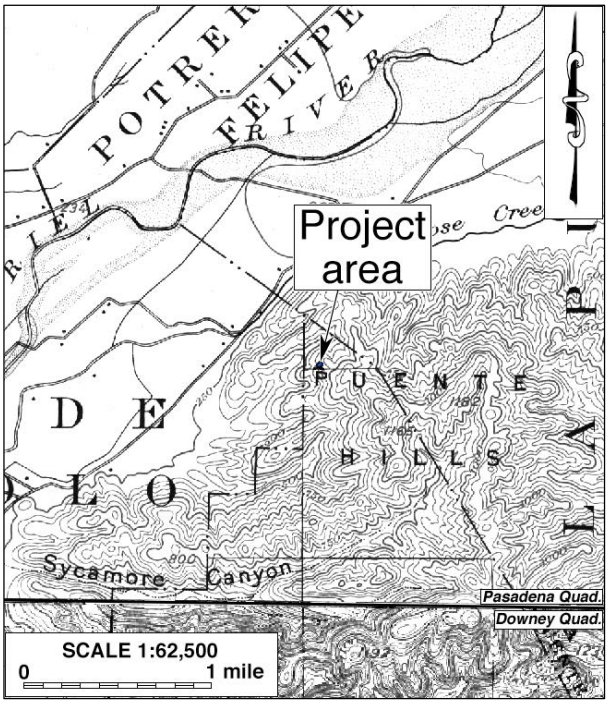


Figure 6. The project area and vicinity in 1893-1894. (Source: USGS 1900; 1902)

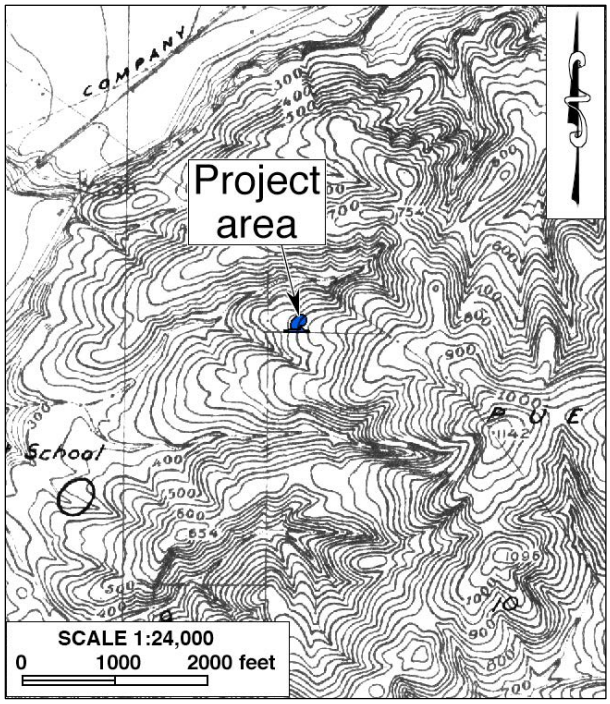


Figure 7. The project area and vicinity in 1923. (Source: USGS 1926)

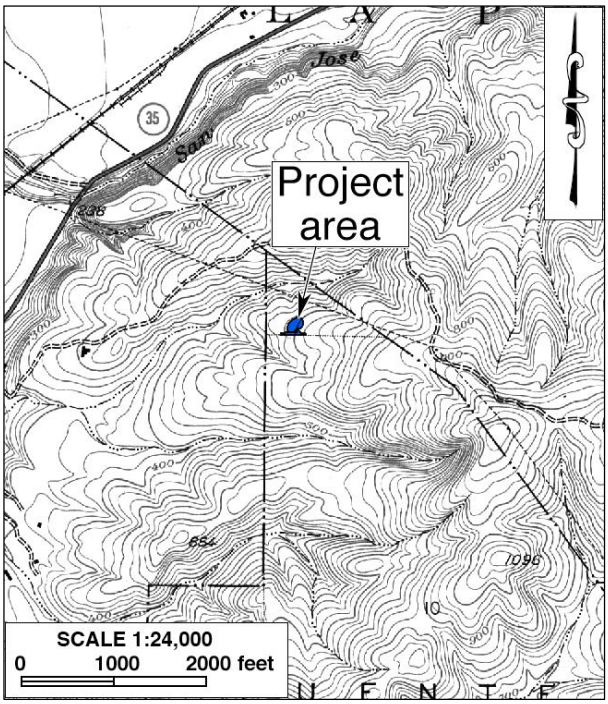


Figure 8. The project area and vicinity in 1946. (Source: USGS 1948)

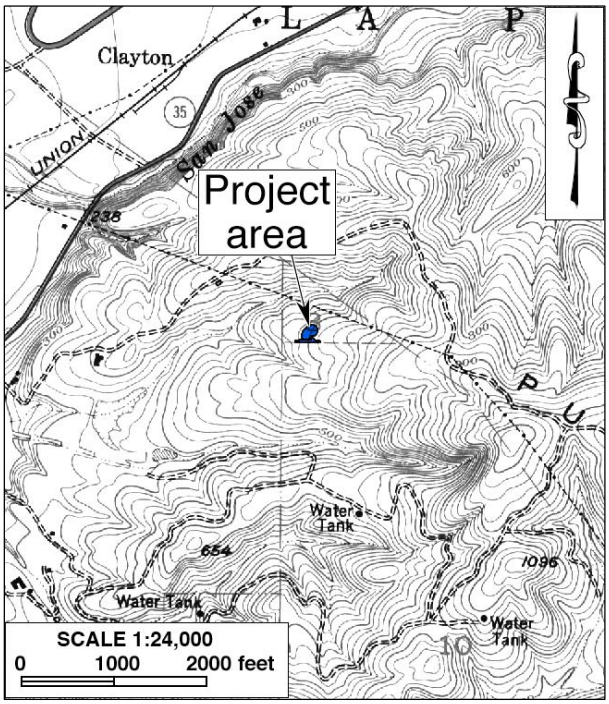


Figure 9. The project area and vicinity in 1952-1953. (Source: USGS 1953)

The only other human-made feature known to be present in the project area as of 1972 was a segment of what is now Observatory Road (NETR Online 1972), evidently an access road to the Horton Tank from the Rio Hondo College campus that was later extended further to the east when the Gordon D. Crowell Astrophysical Observatory of the college was constructed some 300 feet away in the early 1970s (Rio Hondo College n.d.[b]). Since then, no major changes in land use have occurred in or near the project area (NETR Online 1972-2016; Google Earth 1985-2019).

FIELD SURVEY

During the field survey, the existing Horton Tank in the project area was found to be generally intact in relation to its 1964 construction date except for some graffiti and limited modern modifications, such as a solar panel and antennae on top and electrical upgrades (Fig. 10). As such, it was recorded into the California Historical Resources Inventory (see App. 3). The reservoir is a standard aboveground steel cylinder water tank that measures 66 feet in diameter and 40 feet in height, with a capacity of 0.75 million gallons. A spiral steel stairway attached to the side provides access to the top.

The only other feature of historical origin, Observatory Road, is a single-lane, asphalt-paved road of standard design and construction (Fig. 11). As a ubiquitous, minor infrastructure feature that exhibits no distinctively historical character, the road is not considered a potential "historical resource" and requires no further study. No features or artifacts of prehistoric origin were observed on the extensively disturbed ground surface within or adjacent to the project area during the field survey.



Figure 10. Plant No. 7 Reservoir (Photograph taken on March 23, 2021; view to the north)



Figure 11. Observatory Road in the project area. (Photograph taken on March 23, 2021; view to the east)

DISCUSSION

The purpose of this study is to identify any cultural resources within or adjacent to the project area, and to assist the SGVWC and the RHCD in determining whether such resources meet the official definition of "historical resources" as provided in the California Public Resources Code, in particular CEQA. According to PRC §5020.1(j), "'historical resource' includes, but is not limited to, any object, building, 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."

More specifically, CEQA guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the lead agency (Title 14 CCR §15064.5(a)(1)-(3)). Regarding the proper criteria for the evaluation of historical significance, CEQA guidelines mandate that "generally a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1(c))

In summary of the research results outlined above, the existing Horton Tank in the project area, the only historical feature identified and recorded during this study, was built in 1964 as a part of the construction of the Rio Hondo College campus between 1964 and 1966. As such, the historical significance evaluation of the water tank needs to take into account both its individual merits and its potential role as a contributing feature to the significance of the campus as a whole. Throughout the various avenues of research, however, this study has uncovered no evidence that the water tank is closely associated with the productive life of a significant person in national, state, or local history or with a specific event of recognized importance. As a minor infrastructure element of the campus, the Horton Tank has a very low potential to contribute materially to what historic significance Rio Hondo College may have, although the determination of that significance is well beyond the scope of the current study.

In terms of potential merits in design, engineering, or construction, the utilitarian structure does not represent an important example of any style, type, period, region, and method of construction. The manufacturer of the tank, the Chicago Bridge & Iron Company, has been prominent in that industry for roughly a century, but this relatively minor project by no means stands out as the epitome of the large body of work by the company. Finally, as a late-historic-period infrastructure feature of standard design and construction, the Horton Tank holds little promise for important historical or archaeological data. Based on these considerations, the existing Horton Tank in the project area does not appear to meet any of the criteria for listing in the California Register of Historical

Resources, either individually or as a contributor to the potential significance of Rio Hondo College. Therefore, it does not qualify as a "historical resource" under CEQA provisions.

CONCLUSION AND RECOMMENDATIONS

CEQA establishes that "a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired." As stated above, the only cultural resource encountered within or adjacent to the project area during this study is the existing Horton Tank from the late historic period, but it was determined not to meet CEQA's definition of a "historical resource." Therefore, CRM TECH presents the following recommendations to the SGVWC and the RHCD:

- The proposed project will not cause a substantial adverse change to any known "historical resources."
- No further cultural resources investigation will be necessary for the project unless construction plans undergo such changes as to include areas not covered by this study.
- If any buried cultural materials are encountered during earth-moving operations associated with the project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

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1867 Plat Map: Township No. 1 South Range No. 11 West, SBBM; surveyed in 1853-1867.
1868 Plat Map: Township No. 2 South Range No. 11 West, SBBM; surveyed in 1853-1868.

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Rio Hondo College
n.d.(a) History of Rio Hondo College. https://www.riohondo.edu/president/about-us/history-of-rhc/.
n.d.(b) Observatory Nights. https://www.riohondo.edu/mathematics-and-sciences/astronomy/observatory-nights/.
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1958 *The Topanga Culture: Final Report on Excavations, 1948*. University of California Anthropological Records 20(2). Berkeley.
Treganza, Adán E., and Constance G. Malamud
1950 *The Topanga Culture: First Seasons Excavations of the Tank Site, 1947*. University of California Anthropological Records 12(4). Berkeley.
USGS (United States Geological Survey, U.S. Department of the Interior)
1900 Map: Pasadena, Calif. (15', 1:62,500); surveyed in 1894.
1902 Map: Downey, Calif. (15', 1:62,500); surveyed in 1893-1894.
1926 Map: El Monte, Calif. (6', 1:24,000); surveyed in 1923.
1948 Map: El Monte, Calif. (6', 1:24,000); 1923 edition revised in 1946.

1953 Map: El Monte, Calif. (7.5', 1:24,000); aerial photographs taken in 1952, field-checked in 1953.
1969 Map: San Bernardino, Calif. (120'x60', 1:250,000); 1958 edition revised.
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1981 Map: Whittier, Calif. (7.5', 1:24,000); 1965 edition photorevised in 1981.
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APPENDIX 1:
PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/HISTORIAN
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History/Historic Preservation, University of California, Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.
2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1993-2002	Project Historian/Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, University of California, Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, University of California, Riverside.
1988-1993	Research Assistant, American Social History, University of California, Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (with Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

PRINCIPAL INVESTIGATOR/ARCHAEOLOGIST
Michael Hogan, Ph.D., RPA (Registered Professional Archaeologist)

Education

1991	Ph.D., Anthropology, University of California, Riverside.
1981	B.S., Anthropology, University of California, Riverside; with honors.
1980-1981	Education Abroad Program, Lima, Peru.
2002	"Section 106—National Historic Preservation Act: Federal Law at the Local Level," UCLA Extension Course #888.
2002	"Recognizing Historic Artifacts," workshop presented by Richard Norwood, Historical Archaeologist.
2002	"Wending Your Way through the Regulatory Maze," symposium presented by the Association of Environmental Professionals.
1992	"Southern California Ceramics Workshop," presented by Jerry Schaefer.
1992	"Historic Artifact Workshop," presented by Anne Duffield-Stoll.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1999-2002	Project Archaeologist/Field Director, CRM TECH, Riverside, California.
1996-1998	Project Director and Ethnographer, Statistical Research, Inc., Redlands, California.
1992-1998	Assistant Research Anthropologist, University of California, Riverside.
1992-1995	Project Director, Archaeological Research Unit, U.C. Riverside.
1993-1994	Adjunct Professor, Riverside Community College, Mt. San Jacinto College, U.C. Riverside, Chapman University, and San Bernardino Valley College.
1991-1992	Crew Chief, Archaeological Research Unit, U.C. Riverside.
1984-1998	Project Director, Field Director, Crew Chief, and Archaeological Technician for various southern California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Principal investigator for, author or co-author of, and contributor to numerous cultural resources management study reports since 1986.

Memberships

Society for American Archaeology; Society for California Archaeology; Pacific Coast Archaeological Society; Coachella Valley Archaeological Society.

PROJECT ARCHAEOLOGIST/REPORT WRITER
John J. Eddy, M.A., RPA

Education

2013	M.A., Anthropology (Public Archaeology), California State University, Northridge.
2003	B.A., Anthropology/History, California State University, San Bernardino.

Specialized Training and Certificates

2014	National Preservation Institute, Landscape Preservation: Advanced Tools for Managing Change, San Francisco.
2014	National Preservation Institute, Landscape Preservation: An Introduction, San Francisco.
2012	National Preservation Institute, Section 4(f) Compliance for Historic Properties, San Francisco.
2010	Riverside County Cultural Sensitivity Training.
2010	Caltrans Environmental Academy, Caltrans Environmental Staff Development, Irvine.
2010	ESRI ArcGIS II, Caltrans District 8, San Bernardino.
2009	Categorical Exclusions (NEPA) and Categorical Exemptions (CEQA), Caltrans Environmental Staff Development, Los Angeles.
2008	Caltrans Cultural Resource Procedures and Use of the Programmatic Agreement, Caltrans Cultural Studies Office (CSO), Sacramento.
2008	Advanced GIS Applications, California State University, Northridge.

Professional Experience

2019-	Project Archaeologist, CRM TECH, Colton, California.
2017-2018	Lecturer, Department of Anthropology, California State University, San Bernardino.
2014-2017	Senior Archaeologist, Applied Earthworks, Hemet, California.
2010-2014	Associate Archaeologist, Applied Earthworks, Hemet, California.
2009-2010	Associate Environmental Planner (Archaeologist), Caltrans District 8, San Bernardino, California.
2009-2010	Environmental Planner (Archaeologist), Caltrans District 8, San Bernardino, California.
2007-2008	Project Archaeologist, CRM TECH, Riverside/Colton, California.
2007	Archaeologist, Inyo National Forest, Bishop, California.
2003-2007	Project Archaeologist/Native American Liaison, CRM TECH, Riverside, California.
2000	Intern cultural anthropologist, California State University, San Bernardino; Genealogy of Gabrielino Band of Mission Indians; Dr. Alan Turner, Director.

Memberships

Register of Professional Archaeologists; Society for American Archaeology; Society for California Archaeology; Phi Kappa Phi.

PROJECT ARCHAEOLOGIST
Nina Gallardo, B.A.

Education

2004 B.A., Anthropology/Law and Society, University of California, Riverside.

Professional Experience

2004- Project Archaeologist, CRM TECH, Riverside/Colton, California.

Cultural Resources Management Reports

Co-author of and contributor to numerous cultural resources management reports since 2004.

APPENDIX 2

SACRED LANDS FILE SEARCH RESULTS

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[**Vacant**]

COMMISSIONER
[**Vacant**]

COMMISSIONER
[**Vacant**]

EXECUTIVE SECRETARY
Christina Snider
Pomo

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

March 1, 2021

Nina Gallardo
CRM TECH

Via Email to: ngallardo@crmtech.us

Re: Proposed San Gabriel Valley Water Company Plant No. 7 Reservoir Project, Los Angeles County

Dear Ms. Gallardo:

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 positive. Please contact the Gabrieleno Band of Mission Indians – Kizh Nation on the attached list for more information. 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
Los Angeles County
3/1/2021

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
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
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820 Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 Cahuilla
San Jacinto, CA, 92581 Luiseno
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487 Cahuilla
San Jacinto, CA, 92583 Luiseno
Phone: (951) 654 - 2765
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Proposed San Gabriel Valley Water Company Plant No. 7 Reservoir Project, Los Angeles County.

APPENDIX 3

CALIFORNIA HISTORICAL RESOURCES INVENTORY RECORD FORMS

Plant No. 7 Reservoir

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # (Pending)
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** 4 ***Resource Name or #** (Assigned by recorder) CRM TECH 3705-1H

P1. **Other Identifier:** Horton Tank (Reservoir #7)

***P2.** **Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** Los Angeles
and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b.** **USGS 7.5' Quad** El Monte, Calif. **Date** 1964
T2S; **R**11W; SW **1/4 of** SW **1/4 of Sec** 3 ; S.B. **B.M.** (fractional)

c. **Address** N/A (Observatory Road) **City** Whittier **Zip** 90601

d. **UTM:** (Give more than one for large and/or linear resources) **Zone** 11 ; 405,125 **mE**/ 3,764,783 **mN**
UTM Derivation: ☐ USGS Quad ☒ GIS ☐ Google Earth

e. **Other Locational Data:** (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
From the intersection of South Drive and Circle Drive on the Rio Hondo College campus, head southeast on Circle Drive to Observatory Road; continue on Observatory Road to the northeast for approximately 0.35 mile.

***P3a.** **Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The Horton Tank is a type of steel storage tank that the Chicago Bridge & Iron Company manufactured in the mid-20th century and named after its founder, Horace Ebenezer Horton (1843-1912). This specimen, located in the northern Puente Hills and serving the Rio Hondo College campus to the west, is a standard aboveground steel cylinder water tank measuring 66 feet in diameter (*Continued on p. 4*)

***P3b.** **Resource Attributes:** (List attributes and codes) HP11: Engineering structure

***P4.** **Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (isolates, etc.)

P5a. **Photograph or Drawing** (Photograph required for buildings, structures, and objects.)



P5b. **Description of Photo** (view, date, accession number): Photo taken on March 23, 2021; view to the north

***P6.** **Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1964

***P7.** **Owner and Address:** San Gabriel Valley Water Company, 11142 Garvey Avenue, El Monte, CA 91733

***P8.** **Recorded by** (Name, affiliation, & address): Nina Gallardo, CRM TECH, 1016 East Cooley Drive, Suite A/B, Colton, CA 92324

***P9.** **Date Recorded:** March 23, 2021

***P10.** **Survey Type** (describe): Intensive-level survey for CEQA compliance

***P11.** **Report Citation:** (Cite survey report and other sources, or enter "none.") Bai "Tom" Tang, John J. Eddy, and Nina Gallardo (2021): Historical/Archaeological Resources Survey Report: San Gabriel Valley Water Company Plant No. 7 Reservoir Project, near the City of Whittier, Los Angeles County, California

***Attachments:** ☐None ☒Location Map ☐Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Resource Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐Other (List):

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #
HRI #

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Z

***Resource Name or #** (Assigned by recorder) CRM TECH 3705-1H

B1. Historic Name:

B2. Common Name: Horton Tank (Reservoir #7)

B3. Original Use: Potable water storage

B4. Present Use: Same

***B5. Architectural Style:** N/A

***B6. Construction History:** (Construction date, alterations, and date of alterations) A plaque attached to the water tank demonstrates that it was built by the Chicago Bridge & Iron Company of Oak Brook, Illinois, in 1964, during the construction of the Rio Hondo College campus. Known today as CB&I, a part of McDermott International, Inc., the Chicago Bridge & Iron Company was founded in 1889 as a bridge design and construction firm, but it soon shifted its focus to bulk liquid storage in the late 19th and early 20th centuries, coinciding with the western expansion of (*Continued on p. 4*)

***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** **Original Location:**

***B8. Related Features:** None

B9a. Architect: N/A b. Builder: Chicago Bridge & Iron Company

***B10. Significance: Theme** Post-WWII suburban public utility infrastructure

Area Whittier/San Gabriel Valley **Period of Significance** 1960s-1970s

Property Type Potable water reservoir **Applicable Criteria** N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This water reservoir was built in 1964 as a part of the construction of the Rio Hondo College campus between 1964 and 1966. As such, the evaluation of its historical significance needs to take into account both its individual merits and its potential role as a contributing feature to the significance of the campus as a whole. However, the present study has uncovered no evidence that the water tank is closely associated with the productive life of a significant person in national, state, or local history or with a specific (*Continued on p. 4*)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** http://www.historicaerials.com; https://www.riohondo.edu/president/about-us/history-of-rhc/; https://www.companieshistory.com/chicago-bridge-iron/; https://www.mcdermott.com/Markets-Served/Water-Wastewater/Water-Storage/Reservoirs-Standpipes;

B13. Remarks:

***B14. Evaluator:** Bai "Tom" Tang

***Date of Evaluation:** May 29, 2021

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

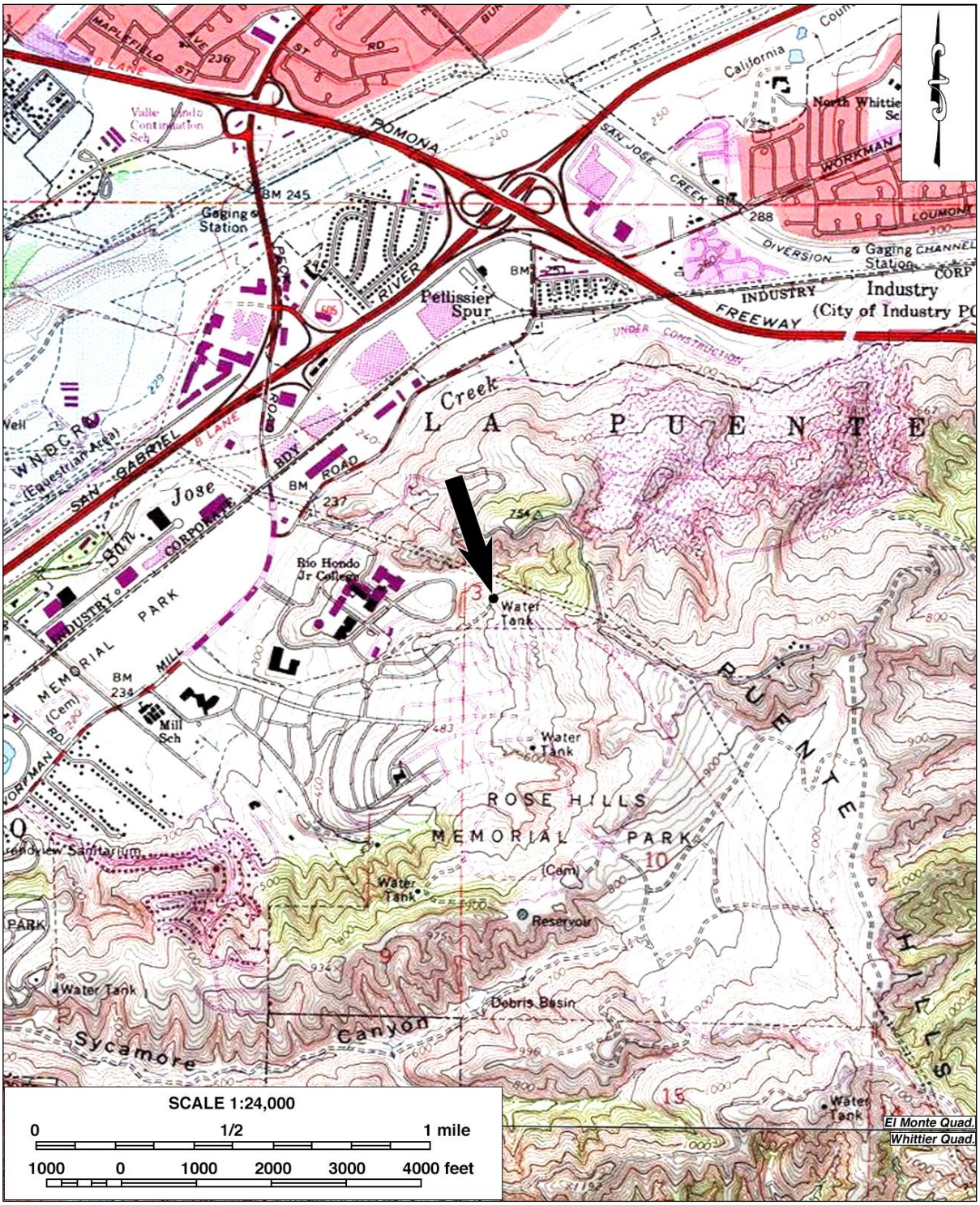
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # _____
HRI # _____
Trinomial _____

*Resource Name or # (Assigned by recorder) CRM TECH 3705-1H

*Map Name: El Monte and Whittier, Calif.
*Scale: 1:24,000 *Date of Map: 1981-1994



* Required information

Recorded by: Nina Gallardo
***Date:** March 23, 2021 √ Continuation ___ Update

***P3a. Description** (continued): and 40 feet in height, with a capacity of 0.75 million gallons. A spiral steel stairway attached to the side provides access to the top. It is generally intact in relation to its 1964 construction date except for some graffiti and limited modern modifications, such a solar panel and antennae on top and electrical upgrades.

***B6. Construction History (**continued**):** railroads across the United States and the discovery of oil in the southwest. The company gained worldwide prominence in the petroleum industry during the 1920s-1930s and, over the years, achieved a number of widely acclaimed distinctions in the field, such as the world's largest steel water reservoir in 1986.

***B10. Significance(**continued**):** event of recognized importance. As a minor infrastructure element of the campus, the Horton Tank has a very low potential to contribute materially to what historic significance Rio Hondo College may have, although the determination of that significance is well beyond the scope of this study.

In terms of potential merits in design, engineering, or construction, the utilitarian structure does not represent an important example of any style, type, period, region, and method of construction. The manufacturer of the tank, the Chicago Bridge & Iron Company, has been prominent in that industry for roughly a century, but this relatively minor project by no means stands out as the epitome of the large body of work by the company. Finally, as a late-historic-period infrastructure feature of standard design and construction, the Horton Tank holds little promise for important historical or archaeological data. Based on these considerations, the Horton Tank does not appear to meet any of the criteria for listing in the National Register of Historic Places or the California Register of Historical Resources, either individually or as a contributor to the potential significance of Rio Hondo College.

APPENDIX 3b

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

MEMORANDUM

Date: December 5, 2021
From: Bai "Tom" Tang, Principal, CRM TECH
To: Kaitlyn Dodson-Hamilton, Vice President, Tom Dodson & Associates
Subject: Addendum to Historical/Archaeological Resources Survey, San Gabriel Valley Water Company Plant No. 7 Reservoir Project, near the City of Whittier, Los Angeles County, California (CRM TECH Contract No. 3778)

Dear Kaitlyn:

I am writing to present to you the results of an historical/archaeological resources survey that our firm recently conducted on additional acreage that has been incorporated into the area designated for the project referenced above (Figures 1, 2). As you know, the original project area, also illustrated in Figure 2, is the subject of a standard Phase I cultural resources survey that our firm completed in May of this year, which encountered no "historical resources," as defined by the California Environmental Quality Act (CEQA), on the property (Tang et al. 2021). The additional project area, consisting of approximately one half of an acre, represents an alternative site for the proposed San Gabriel Valley Water Company Plant No. 7 Reservoir, located directly to the south of the original project area and mostly across Observatory Road (Figure 2).

As a part of this addendum, CRM TECH personnel reviewed the results of the cultural resources records search, the Native American Sacred Lands File search, and the historical background research conducted for the original survey and found no evidence of any known "historical resources" or notable cultural features of historical origin in the additional project area. On October 1, 2021, project archaeologist Nina Gallardo, B.A., carried out a field inspection of the additional project area. The survey was conducted at an intensive level by walking several parallel east-west transects at approximately 15-meter (50-foot) intervals. Most of the newly added acreage was found to be in an undeveloped but previously disturbed condition (Figure 3), and portions of the ground surface showed evidence of relatively recent earth-moving operations. These past episodes of ground disturbance were confirmed by Gallardo during the field inspection. Throughout the course of the survey, no features or artifacts of prehistoric or historical origin were observed within the additional project area.

Based on the research results summarized above, this addendum concludes that the finding of the original survey—that the proposed project would not cause a substantial adverse change to any known "historical resources" (Tang et al. 2021:15)—and the recommendations made in that study remain valid and appropriate after the incorporation of the additional acreage.

Thank you for this opportunity to be of service.

Sincerely,

Bai "Tom" Tang, M.A.

Tel: 909 824 6400 Fax: 909 824 6405

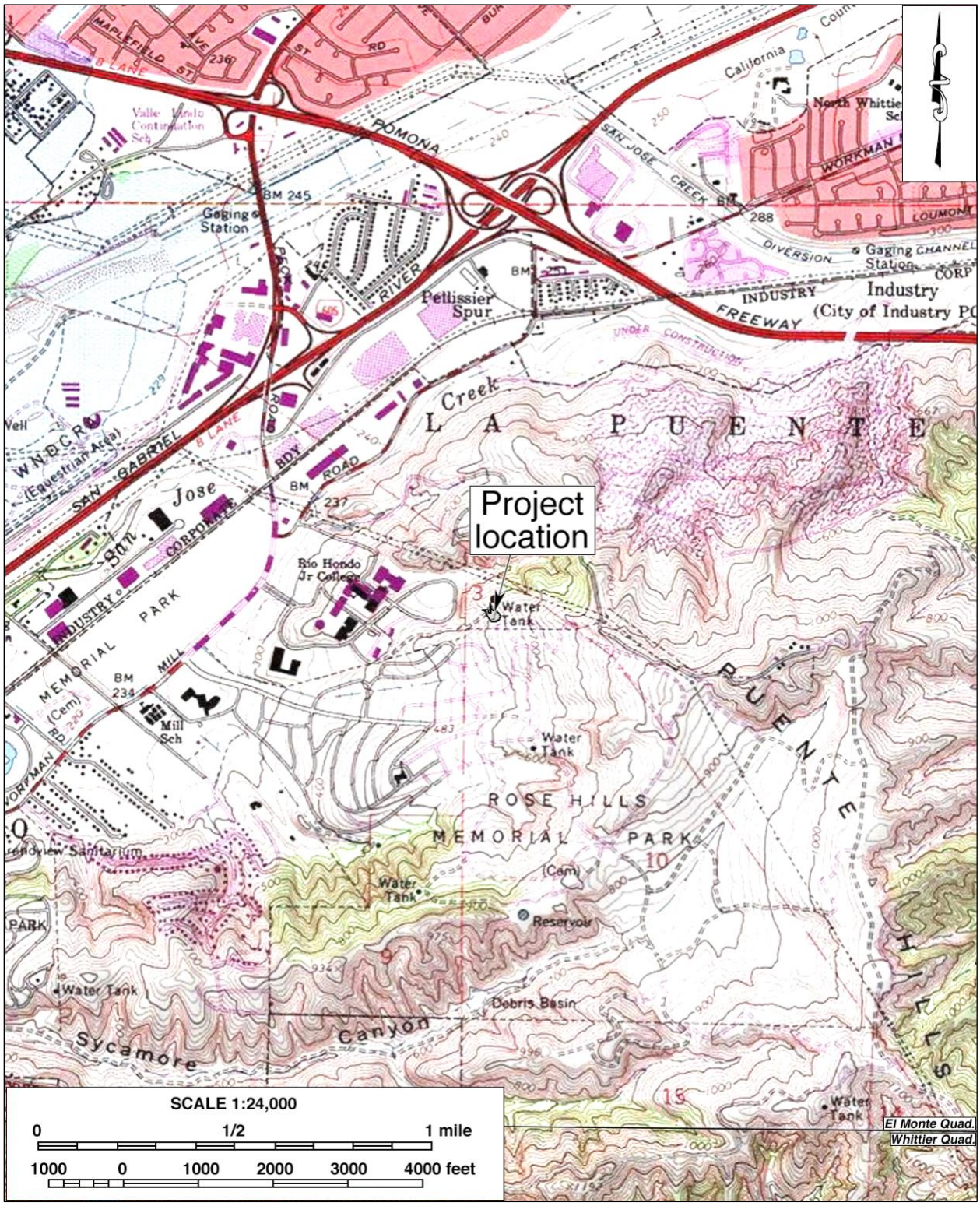


Figure 1. Location of the additional project area. (Based on USGS El Monte and Whittier, Calif., 7.5' quadrangles)

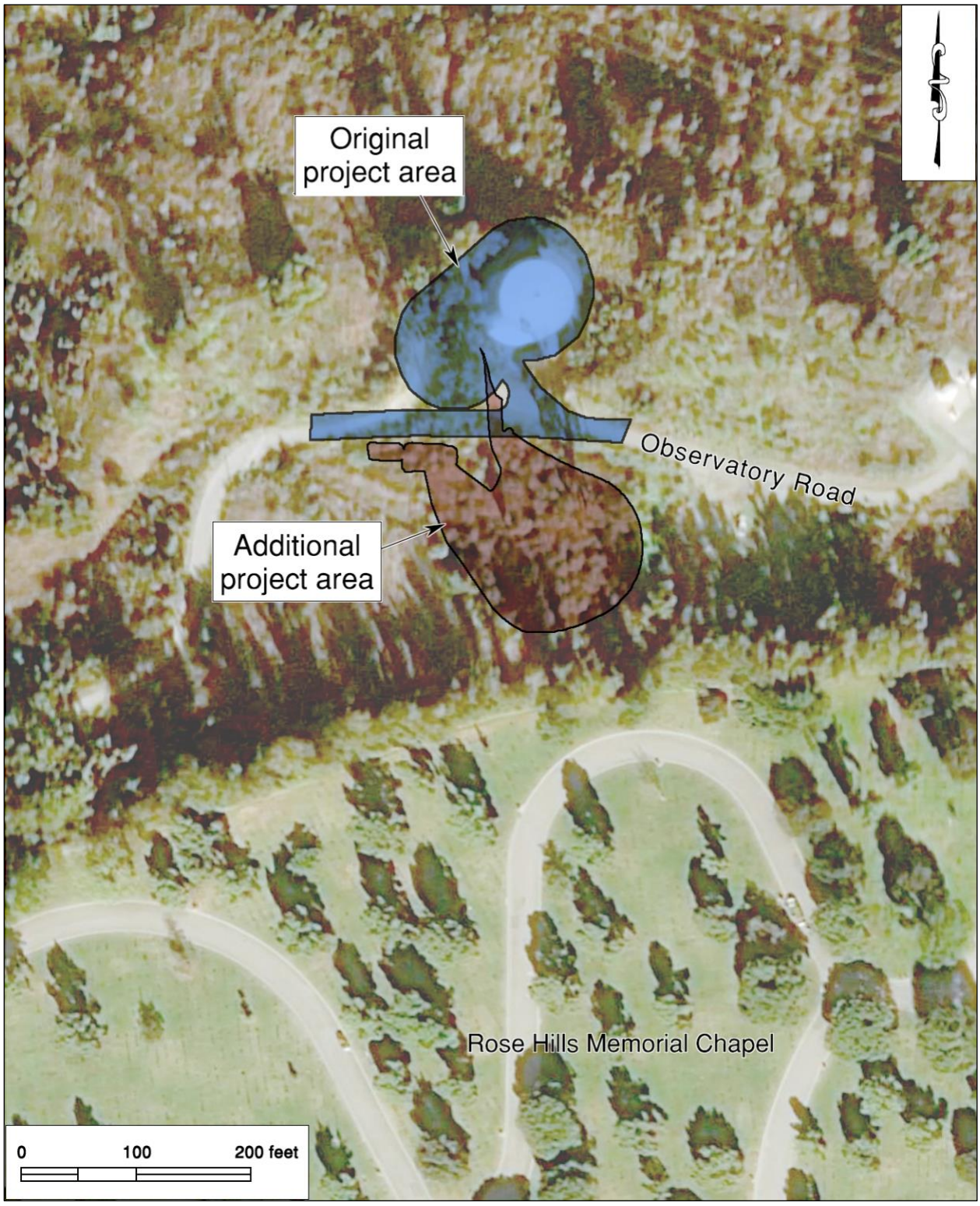


Figure 2. The additional acreage in relation to the original project area.



Figure 3. Overview of the additional project area. (Photograph taken on October 1, 2021; view to the west)

Reference Cited:

Tang, Bai "Tom," John J. Eddy, and Nina Gallardo
2021 Historical/Archaeological Resources Survey Report: San Gabriel Valley Water Company Plant No. 7 Reservoir Project, near the City of Whittier, Los Angeles County, California. Report prepared by CRM TECH for Tom Dodson & Associates and the San Gabriel Valley Water Company.

APPENDIX 4

ABI ENGINEERING CONSULTANTS, INC.

PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT

PLANT NO. 7

SAN GABRIEL VALLEY WATER COMPANY
3600 Workman Mill Road, Whittier, CA

Prepared For:
San Gabriel Valley Water Company
11142 Garvey Avenue
El Monte, CA 91733

April 7, 2022
ABI Project No.: 21126
San Gabriel Job No.: 9667L

Prepared by:
ABI Engineering Consultants, Inc.
1701 E. Edinger Ave., Suite A9
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April 7, 2022
Project No. 21126

San Gabriel Valley Water Company
11142 Garvey Avenue
El Monte, CA 91733

Attention : Michael Galvan, Project Manager

Subject: Preliminary Geotechnical Investigation Report for Proposed new storage tank at Plant No. 7, 3600 Workman Mill Road, Whittier, California, San Gabriel Job No. 9667L

Dear Mr. Galvan:

ABI Engineering Consultants, Inc. is pleased to present this report of our geotechnical and geological investigation for proposed development at San Gabriel Valley Water Company ("San Gabriel") Plant No. 7 located at 3600 Workman Mill Road in an unincorporated area of Los Angeles County in Whittier, California. Our services for this project were performed in general accordance with our proposal dated February 9, 2021.

This report presents a review of the project information provided to us, a description of the surface and subsurface conditions, descriptions of potential geotechnical and geological hazards, geotechnical recommendations for foundation design and construction, seismic information, and a summary of excavation and earthwork recommendations for soils encountered at the subject site. Attachments to the report include a site vicinity map, soil boring location plan, geological maps and sections, soil boring logs, laboratory test results, and slope stability analysis results.

We appreciate this opportunity to provide our services and look forward to assisting as your geotechnical consultant throughout this project. Please contact us if you have any questions or require additional information.

Sincerely,
ABI Engineering Consultants, Inc.

REGISTERED PROFESSIONAL ENGINEER
DAYANAND P. BETTADAPURA
No. C046505
Exp. 6·30·23
CIVIL
STATE OF CALIFORNIA

Daya Bettadapura, MS, PE
Principal Engineer

REGISTERED GEOLOGIST
DAVID D. BRAMWELL
No. 2112
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

David Bramwell, CEG
Certified Engineering Geologist

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APPENDICES

Appendix A – Boring Logs
Appendix B – Geotechnical Laboratory Test Results
Appendix C – Slope Stability Analyses

1 INTRODUCTION

ABI Engineering Consultants, Inc. (ABI) completed a preliminary geotechnical investigation at the proposed development Plant 7 located at 3600 Workman Mill Road in Whittier, California (see Figure 1). The proposed development includes construction of a new 0.6-million -gallon ("MG") steel water storage reservoir, site grading, construction of retaining walls, perimeter fencing, and related site improvements. The proposed new reservoir will be 60 feet in diameter by 40 feet in height and will have a physical capacity of 0.846 million gallons. The site plan is shown on Figure 2.

1.1 Purpose

The purpose of this geotechnical investigation was to characterize the subsurface soils at the site to provide geotechnical recommendations, including foundation design parameters, lateral earth parameters, and seismic parameters.

1.2 Scope of Work

The scope of geotechnical services included the following tasks:

- Site reconnaissance and review of available data
- Coordinating site access
- Performing drilling and sampling
- Performing laboratory testing
- Engineering analysis of field and laboratory data
- Evaluation of the site for potentially significant geotechnical and geological hazards, and
- Preparation of this Geotechnical Investigation report.

The assessment of general site environmental conditions, the presence or absences of petroleum impact in the soil, groundwater, or surface water of the site were beyond the scope of this investigation.

2 SUBSURFACE INVESTIGATION AND LABORATORY TESTING

2.1 Subsurface Investigation

The subsurface conditions beneath the site were explored by drilling three (3) soil borings on September 8, 2021. The locations of borings B-1 to B-3 are shown on Figure 2, and were located close to the locations indicated by the client. The borings labeled B-1 to B-3 were drilled to depths of 50 feet below existing ground surface (bgs).

The borings were drilled using a track-mounted drill rig equipped with 6-inch diameter hollow stem augers. Standard Penetration Test blow counts (SPT-N) and blow counts for penetration of Modified California Sampler were obtained, alternatively at 2.5 feet intervals to 10 feet, and 5 feet intervals from 10 feet to 50 feet. Relatively undisturbed soil samples were obtained by driving 3-inch outer diameter Modified California Sampler lined with 2.4-inch internal diameter metal rings. Bulk soil samples were collected from drill cuttings. The collected soil samples were stored in plastic containers or bags to retain the natural moisture content. After completion of logging and sampling, the boreholes were backfilled with on-site soils.

The soils were visually classified in the field in accordance with the Unified Soil Classification System (USCS) in accordance with ASTM D2488 standard procedure. The borings were logged by our Certified Engineering Geologist (CEG) and Field Engineer. The logs of the soil borings are presented in Appendix A. The logs represent our interpretations of the subsurface conditions based on our field observations, a visual examination of samples, and the indicated laboratory tests performed on selected samples. The line designating the interface between various strata on the soil boring log represents the approximate positions of the interface. The actual transition between strata may be gradual.

2.2 Geotechnical Laboratory Testing

Selected representative samples obtained from the borings were tested in ABI's Geotechnical laboratory. Based on the soil types encountered, relevant tests for soil classifications and physical properties were performed in consistent with ASTM standards or California Standards. The following tests were performed:

1. In-situ moisture content and density (ASTM D2216 and ASTM D 2937)
2. Particle-Size Distribution using Sieve Analysis (ASTM D 6913)
3. Percent Passing no. 200 (ASTM D 1140)
4. Atterberg limits (ASTM D 4318)
5. Expansion Index Test (ASTM D 4829)
6. Direct shear test (ASTM D 3080)
7. R-Value (CA 301) and,
8. Minimum Resistivity Content (CA 643), Sulfate Content (CA 417), Chloride Content (CA 422), Sulfate content (CA 417).

The test results are included in Appendix B.

3 SITE, GEOLOGY AND SUBSURFACE CONDITIONS

3.1 Site Conditions

The site for the new tank is south of the existing tank, and on a gentle, west-facing slope that is undeveloped and vegetated. The USGS topographic quadrangle map, and the topographic survey of the site provided by SGVWC, indicate the overall inclination of the site's west-facing slope varies and is approximately 5:1 (horizontal to vertical). The site is at an elevation of about EL. 600 feet with respect to mean sea level (MSL).

3.1.1 Regional Geology

The subject property is in the northerly part of the Peninsular Range Province; and on the north-facing flank of the Western Puente Hills. The Western Puente Hills terrain has developed in deformed, Upper Miocene and Upper Pliocene aged, marine sediments. Tan, 1997, "Geologic Map of the El Monte 7.5 Minute Quadrangle, Los Angeles County, California" indicates the subject property is underlain by the Pliocene age, lower Fernando Formation (Tfl). Tan describes The Fernando unit underlying the site as a massive, silty sandstone with interbeds of pebbly sandstone and conglomerate. Tan's map plots bedding plane attitudes near the site to strike northeasterly and dip gently to moderately to the northwest.

Ground shaking, due to earthquakes along regional faults, will impact the subject property. CGS, 2010, "Fault Activity Map of California" plots the following regional faults with Historic movements in proximity to the site: an Unnamed fault and the Newport-Inglewood fault are, respectively, 6.9 miles south and 20 miles west, of the property. Additionally, regional faults with Holocene movements near the site are: the Whittier, Unnamed, Raymond, and Chino which are, respectively, 1.1 mile southwest, 3.5 miles northwest, 9.4 miles north, and 18.8 miles east, from the property.

3.1.2 Site Geology

To appraise the geologic conditions of the subject property, we have utilized information of the Tan map; CDMG and CGS publications, Google Earth photos, and the geotechnical investigation boring logs. Except for boring-B-1, the borings were advanced in the new tank area; and all borings were drilled to 50 feet bgs (See Figure 1).

Boring B-1 was drilled along the proposed access road alignment between the old and new tank sites. The upper 6 feet of the boring encountered colluvial/residual soil (Qcol/RS) clay (cl). Between 6 feet bgs and the bottom of the boring, Fernando Formation (Tfl) deposits consisting of plastic claystone and mudstone were found. The condition of the penetrated Fernando formation graded from weathered and moderately soft at 6 feet bgs to slightly weathered and stiff to hard at 25 feet bgs. Bedding planes were identified at 40 and 51 feet bgs with dips measured, respectively, at 22 and 16 degrees from horizontal.

Boring B-2 was advanced near the center of the area for the new tank. The upper 15 feet penetrated by the boring consists of colluvial (Qcol) clay (cl) that is soft to medium soft and plastic. From 15 feet bgs to the bottom of the boring, Fernando Formation (Tfl) deposits were encountered. Through

this reach, the Fernando formation is plastic claystone and mudstone; and it grades from medium soft and moderately weathered at 15 feet bgs to stiff/hard and slight weathered at 25 feet bgs.

Boring B-3 was drilled westerly of B-2 and just outside the footprint of the new tank. The upper 2 feet of the boring penetrated of colluvial (Qcol) soft clay (CL). Between 2 and 6 feet bgs, Fernando Formation (Tfl) materials, weathered to soil fractions of clay (CL) were found. From 6 feet bgs to the bottom of the boring, Fernando deposits of claystone and mudstone were found. At 6 feet bgs, these deposits were medium soft and moderately weathered and then graded to stiff and slightly weathered at 15 feet bgs.

A site-specific geologic map was prepared based on logs of borings and mapping of surficial geomorphic expressions around the new tank site (see Figure 3). Geologic cross sections A-A' and B-B' are presented in Figure 4. An approximate attitude of bedding is plotted at B-1 based on the dips measured in samples from the bore and a strike extrapolated from Tan's mapping in the vicinity of the new tank. From this approximate attitude, apparent dips were computed for the bedrock at each cross section.

The plotted apparent dip on sections A-A' and B-B' suggest that the apparent dip of the bedding planes and inclination of the west-facing slope are parallel. Based on this correlation, the west facing slope is a "dip slope". Due to the low true and apparent dip of the Fernando bedding planes in the site slope, any excavations into this slope will undercut bedding planes and render the up-slope earth materials unstable.

3.2 Subsurface Conditions

Based on the soils encountered during our investigation, the subsurface consists of predominantly Sandy Clay/Clay (CL) in medium stiff to stiff conditions in dry to moist conditions in the upper 6 to 15 feet. These soils have high plasticity, compressible have high expansion potential. Formational bedrock materials below the upper soil layers consist of very stiff to hard clay to the explored depth of 50 feet below ground surface (bgs). Detailed descriptions of site subsurface soils are shown in the attached boring logs and laboratory test results.

3.3 Other Geologic Considerations

3.3.1 Seismicity

The subject property is not in an Alquist-Priolo Earthquake Fault Zone; nor are any faults mapped, or inferred, through the site. USGS, 2008, "National Seismic Hazard Model for Conterminous U.S." suggest the degree of ground acceleration (PGA) the site will experience will be 93% of gravity with a 2% chance of exceedance in 50 years. Additionally, CGS, 2016, "Earthquake Shaking Potential for California" suggest the degree of ground shaking at the property will be low to moderate. However, the degree of shaking at the site will be no greater than shaking at neighboring properties. And USGS, 1990, "Probabilistic Earthquake Acceleration and Velocity Maps for the United States and Puerto Rico, MFS Map 2120" indicates the site can experience horizontal ground acceleration of 41% of gravity, and a vertical ground acceleration of 42% of gravity, with a 90% chance of non-exceedance over 50 years.

3.3.2 Groundwater

Groundwater was not encountered during our exploration at site to the explored depth of 50 feet bgs. Fernando Formation deposits are not considered as a source for groundwater. However, seasonal and long-term fluctuations in the groundwater may occur as a result of variations in subsurface conditions, rainfall, run-off conditions, and other factors.

3.3.3 Liquefaction

Liquefaction involves sudden loss in strength of a saturated, cohesionless soil (predominantly sand) caused by the build-up of pore water pressure during cyclic loading, such as that produced by an earthquake. This increase in pore water pressure can temporarily transform the soil into a fluid mass, resulting in vertical settlement and can also cause lateral ground deformations. Typically, liquefaction occurs in areas where there are loose sands and the depth to groundwater is less than 50 feet from the surface. Seismic shaking can also cause soil compaction and ground settlement without liquefaction occurring, including settlement of dry sands above the water table.

The property is underlain by consolidated claystone and mudstone – lithologies considered to be non-liquefiable. CGS, 2017, "Earthquake Zones of Required Investigation, El Monte Quadrangle" does not identify a potential of liquefaction at the subject property.

3.3.4 Landslides

The CGS's 2017 publication suggests a potential for landslides to develop in the Fernando bedrock in terrain in which the subject site, and its vicinity, are located. A slide is present in the north-facing slope, northerly of the site of the existing Plant #7 tank. However, there are no landslides mapped or existing in the new tank site area.

3.3.5 Flooding

Flooding, and erosion down the west-facing slope easterly of the tank site, due to sheet flow, should be considered.

3.3.6 Slope Stability

The site is in a state of California seismic Slope Stability Hazard Zone (See Figure 7). After reviewing Google Earth and visiting the site, multiple shallow failures, erosion rills rodent borrows and bioturbation and piping from the borrows were found throughout the western slope face. The rills were encroaching toward the tank site. These failures, erosion and rodent problems were not an issue of stability to the tank construction during the walkover but could be a maintenance issue in the future. There are no landslides mapped or existing in the new tank site area.

Slope Stability Analysis Section

Stability analysis was performed for the proposed 2:1 (horizontal: vertical) cut slope upgradient of the proposed tank location as shown on the conceptual development plan (See Figure 3). Section A-A' from this plan was analyzed for slope stability. The slope stability analysis was performed consistent with the guidelines of LADBS Information Bulletin P/BC 202-049. Computer program

ReSSA developed by ADAMA Engineering was used for slope stability analysis. The stability analysis was performed for rotational failure mode using Bishop's method. The failure along number of potential circular failure surfaces were analyzed, and then the surface with the lowest factor of safety was determined.

Shear Strength Parameters

Based on direct shear test results completed in this project, the slope stability was analyzed using shear strength parameters presented in Table 1.

Table 1: Shear Strength Parameters

Material Description	Unit weight (pcf)	Internal frictional angle (deg.)	Cohesion (psf)
Colluvial/Residual Soil	120	33	80
Fernando Formation –Bedrock	120	32	216

Seismic Factor

The seismic coefficient, K_{eq}, used in pseudo-static stability analysis was determined in accordance with the guidelines addressed in Section 4.B of LADBS P/BC 2020-049 and the Special Publication 117A.

$$K_{eq}=f_{eq} * MHA_r \quad \text{(Equation 1)}$$

Where MHA_r is the maximum horizontal acceleration at the site for a soft rock site condition, and f_{eq} is a factor related to the seismicity of the site. Using Blake and others (2002) procedure for seismic slope stability analysis, has simplified the process of calculating the F_{eq} for ranges of magnitude and distance by preparing sets of curves for displacement (u value) of 5 cm.

The nearest fault to the property is the Whittier Fault which is 1.1 mile southwest of SGVWC Plant #7 and has Holocene age movement. Caltech's Southern California Earthquake Data Center indicates the Whittier has probably magnitudes between 6.0 and 7.2. The Brea General Plan lists the maximum credible earthquake (MCE) for the Whittier Fault at 7.3. The Whittier fault is a strike-slip feature with movement during the Holocene (during the past 11,000 years-geologically recent time). Peak Ground Acceleration (PGA) is 93% of gravity with 2% chance of exceedance over a 50-year period. USGS, 1990, "Probabilistic Earthquake Acceleration and Velocity Maps for the United States and Puerto Rico, MFS Map 2120" indicates the site can experience a maximum Horizontal Acceleration (MHA) of 41% of gravity and a vertical ground acceleration of 42% of gravity, with a 90% chance of non-exceedance over 50 years.

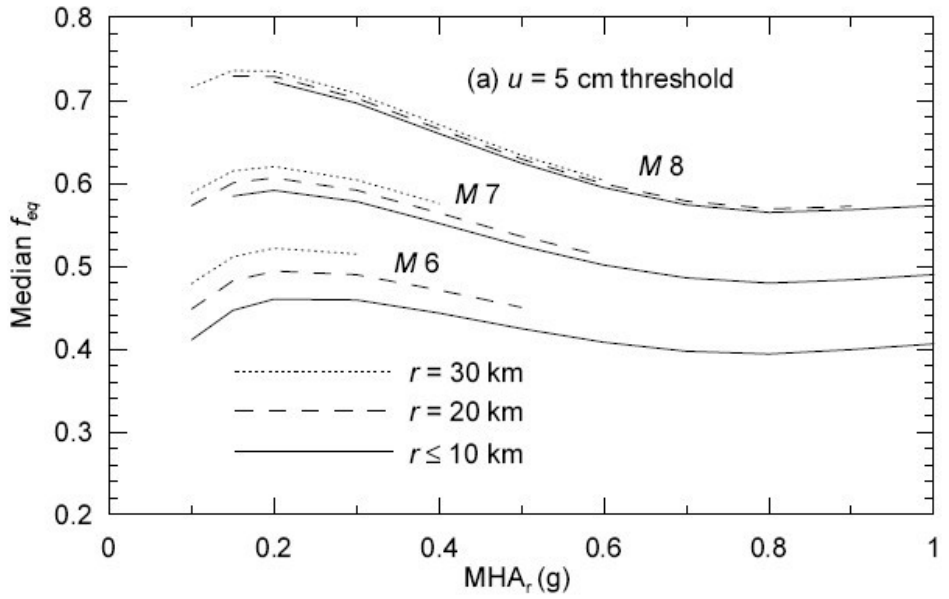


Figure 1: Values of f_{eq} as a function of MHA_r

From the U.S. Seismic Design Maps, we get a PGA_M of 0.969g, fault distance r of 3.07 km, earthquake magnitude (M) of 6.63, and threshold (u) of 5 cm. The r and M values were obtained using the USGS Unified Hazard Tool website. From Figure 1 above, f_{eq} is 0.5. Using Equation 1, the seismic coefficient, k_{eq} is 0.485g, which was used for stability analysis under seismic (pseudo-static) conditions.

The stability analysis was performed by searching a number of circular failure surfaces to identify the surface with the lowest factor of safety. The analysis results for both static and seismic conditions for section A-A' are presented in Table 2.

Table 2: Slope Stability Analysis Results

Analysis Section	Static Factor of Safety	Seismic Factor of Safety
A-A'	3.09	1.54

The calculated factors of safety are greater than the minimum acceptable factor of safety of 1.5 and 1.125 for static and seismic conditions, respectively. The proposed 2:1 west facing slope was determined to have acceptable factors of safety under static and pseudo-static conditions. The results of the slope stability analysis are included in Appendix C.

3.3.7 Expansion Potential

Expansive soils contain significant amounts of clay particles that swell considerably when wetted and shrink when dried. Foundations constructed on these soils are subject to uplifting forces caused by the swelling. Without proper mitigation measures, heaving and cracking of both building foundations and slabs-on-grade could result.

The soils encountered immediately beneath the proposed improvements during our exploration were colluvial/residual soil (Qcol/RS) clay (cl) to 15 feet, and Fernando formation to maximum explored depth of 51.5 feet below ground surface (bgs). A representative soil sample at the near surface has an expansive index (EI) of 115. Therefore, the subsurface soils are considered expansive with high expansion potential.

The proposed grading will remove existing surficial soils. Therefore, additional tests shall be performed upon grading to determine the expansion potential of the exposed soils at the bottom of the proposed tank foundations. However, the heavy weight of the proposed tank is considered to apply bearing pressures exceeding the expansive forces of the soils. To mitigate expansive potential, the over excavation and re-compaction of the tank pad shall consider compacting the soils at moisture contents 2 to 3 percent above the optimum moisture content.

3.3.8 Soil Corrosivity

Corrosive soils may have an adverse impact on below ground concrete and buried metallic objects. A near surface soil sample was tested Sulfate (concrete damage) and chlorides. Per the attached the test results, the water-soluble sulfate content in soil is 102 ppm, which equates to 0.0102 percent sulfate by mass in soil. Therefore, the requirements of Category S, Exposure Class S0 per ACI 318-14 Table 19.3.1.1 is applicable. Results for water-soluble chloride for on-site soil is 22 ppm, which equates to 0.0022 percent chloride by mass in soil which is "Low". The result for pH is 7.9 which is "Neutral". Concrete should be designed in accordance with the durability requirements of 2019 CBC Section 1904 and ACI 318. Type II of Portland cement may be used for concrete exposed to the native subsurface soils. The water-cement ratio should be 0.5 or less.

4 CONCLUSIONS AND RECOMMENDATIONS

It is our opinion that the proposed improvements at the subject site are feasible from geotechnical and geological considerations. The proposed construction should not adversely impact the structures on the property or neighboring properties from a geotechnical perspective provided recommendations in this report are implemented during the design and construction of proposed improvements. The recommendations are based on site specific subsurface conditions and soil properties determined in this investigation.

4.1 Site Preparation and Earthwork

Earthwork is expected to consist of site clearing, over-excavation and placement of fill soils for the proposed reservoir pad, slope grading and other site improvements. Recommendations for site earthwork are provided in the following paragraphs.

4.1.1 Site Preparation

All earth work should be performed after clearing the site of vegetation, debris, and topsoil, if any. After clearing the site, the exposed soils should be carefully inspected to verify the removal of all unsuitable deposits and deleterious materials. Any existing utility lines buried abandoned utilities or objects should be removed. Unsuitable materials uncovered during grading excavation should be excavated to expose a firm surface or undisturbed natural soils.

If soft or "pumping" areas are observed, the area should be excavated beyond the limits of the soft pocket and re-compacted with suitable fill material according to the recommendations presented below in fill placement and compaction paragraphs.

4.1.2 Fill Materials

On-site soils are generally not suitable as structural fill materials as they are highly plastic and expansive. On-site soils may be used as structural fill by admixing cement – soil cement. However, they may be utilized for general fill and slope grading, provided the soils are free of organic materials, construction debris, and particles larger than 3 inches. Import fill soils, if required, should be non-expansive granular soils, free of deleterious materials and oversized rocks larger than 3 inches. All import materials should be approved by the Geotechnical Engineer prior to importing to the site for use as compacted fill.

4.1.3 Fill Placement and Compaction

Prior to placement of fill, the exposed subgrade surfaces, including all excavation or removal bottoms, should be observed by the geotechnical consultant to verify that suitable competent soil is exposed. The exposed subgrade should be scarified to a depth of eight inches, brought to near optimum moisture content, and compacted.

Any required fills shall be placed in layers of approximate 8-inch-thick loose lifts, moistened to 2 to 3 percent above optimum moisture content and compacted. All structural fill soils should be compacted to a minimum of 95 percent of the maximum dry density. The maximum laboratory

density and optimum moisture content shall be determined by Modified Proctor Compaction Test per ASTM D1557 test standard.

The fill surface must be maintained during construction to achieve the recommended compaction. We recommend that the fill surface be sloped to provide drainage and to prevent water from ponding on the fill. If precipitation is expected, fill construction shall be temporarily stopped and the surface shall be rolled with a steel drum or rubber-tire roller to improve surface runoff. If the surface soils become excessively wet, fill operations shall be halted and the geotechnical engineer shall be consulted prior to continuing fill operations.

4.1.4 Temporary Excavations

Temporary excavations should be performed in accordance with Occupational Safety and Health Administration (OSHA) requirements. Based on our field investigation, the anticipated subsurface materials are predominantly "Type A Soils". Any excavations over 4 feet in height shall be sloped back at minimum gradient of 3/4:1 (horizontal to vertical) or be shored or braced for safety and should be protected from erosion during construction. Excavations extending below a 1:1 (H: V) plane extending down from any adjacent footings should be shored for safety.

The contractor is solely responsible for site safety during construction. The contractor should be aware of that the excavation height and slope inclination in no case exceed those specified in local, state, and federal safety regulations.

4.2 Foundation Design Considerations

4.2.1 Foundation Setback Requirements

The foundations shall be set-back in accordance with Section 1808.7 of the CBC 2019 or County of Los Angeles Grading Guidelines Slope Setback Requirements. As the site has a greater than 40 feet high descending slope, foundation bottoms of any structures shall be setback at least 15 feet from the slope surface.

4.2.2 Over-Excavation

The proposed 40 feet high tank applies moderate loads on the foundation and subgrade soils. The upper 6 to 15 feet colluvial soils consisting of medium to high plasticity silty clay and clay in medium stiff conditions are considered relatively compressible based on their consolidation properties. This soil layer can be expected to result in excessive settlements based on the loads anticipated from the tank. The formation material below the upper compressible layer is considered to be competent to support the tank on shallow foundations.

Cross Section C-C' in Figure 6 indicates the depth to formational material is 15 feet bgs. Therefore, over-excavation is recommended to a minimum depth of 7 feet below the proposed bottom grade of the tank. The over-excavation should be extended horizontally to a minimum of 7 feet beyond the tank footprint. The over-excavation is recommended to filled with non-expansive granular soils and compacted to minimum densities recommended in this report. Prior to backfilling the over-excavation, geotechnical engineer should observe the exposed subgrade to confirm the material

type. Lowering the bottom grade of the tank may be considered to result in reduced depth of over-excavation and backfill.

4.2.3 Ground Improvements

Ground improvement is recommended to replace the highly compressible and expansive soils to mitigate excessive long-term settlements beneath the tank. Ground improvements to improve the consistency of the soils may be considered if shallow foundations are considered. Ground improvement can be achieved by considering one or more of the following methods.

- Removal of clay and backfilling with imported granular soils or on-site soil mixed with cement. Upon completion of over-excavation, the bottom of the excavation shall be scarified and compacted. Excavation bottom shall be firm, unyielding and be free of any soft spots. Selected fill as indicated above shall be placed compacted as described below.

- Cement or chemical grouting to improve the soil consistency to densify the soils and reduce the plasticity and expansion potential of the soils.

- Stone columns consisting of gravel columns placed by vibratory methods from the pad level to formational material.

4.2.4 Slope Grading

The proposed 2:1 slope grading on the west facing slope has potential to undercut the bedding. While the global stability of the slope is not a concern, the bedding may result in surficial instability resulting in weathering or sloughing of the slope surface. The following recommendations are provided as potential options for slope grading and maintenance.

- Grading the west facing to slope to 3.5:1 to 4:1(maximum 16 degrees or flatter) inclination and construction of a sluff wall at toe of slope to catch soil sluff.

- Surficial slope stabilization by installing geogrids reinforcement for proposed 2:1 slope with erosion control measures for the surface

- Combination of slope grading and retaining walls with freeboard

Permanent erosion control measures such as drainage devises and vegetation of slope is recommended regardless the option chosen for slope grading. Detailed engineering design of the site or any other aspect of this project is beyond the scope of this geotechnical report.

4.2.5 Shallow Foundations

Shallow foundations consisting of continuous strip footings and/or isolated spread footings may be designed to impose a net dead plus live load pressure of 3,500 pounds per square foot (psf) when established on certified fill or competent native subgrade (formational material). The

allowable bearing pressure may be increased by one-third for short-term live loads (e.g. seismic and wind loads).

The bottoms of the footings should be embedded a minimum of 24 inches below the lowest adjacent grade or floor level. The minimum width of continuous footing shall be 24 inches. Steel reinforcement for footing should be designed by the project structural engineer. We recommend the minimum reinforcement shall be 4 #5 bars; 2 at top and 2 at bottom on exterior footing as well as interior strip footings.

The foundation excavations should be observed by qualified special inspection personnel to verify that the excavations are clean, and that the bearing fill soils, or subgrade have not been disturbed. In cases where the bearing soils have been disturbed during excavation or have become overly dry due to having been left open for extended periods, the bearing soils should be reconditioned and re-compacted.

4.2.6 Mat Foundation Recommendations

The mat foundation consists of a thick, rigid concrete mat that allows the entire footprint of the structure to carry building loads. The mat foundation can tolerate significantly greater differential movement. A mat foundation system will allow the structure to settle or expand with the ground and should have sufficient rigidity to allow the structure to move as a single unit. Given the soft soil conditions at the site, the mat foundations can be considered if soil stabilization is implemented to address the soft soil conditions at the site.

An allowable bearing capacity of 3,500 pounds per square foot (psf), including both dead and live loads, may be used for the design of mat foundation. The allowable bearing value may also be increased by one-third for short-term live loads (e.g. seismic and wind loads). The mat foundation can be designed based on a modulus of subgrade reaction, K_s, of 70 pounds per cubic inch. This value is based on 1-foot square bearing area and needs to be scaled to account for mat foundation size effects. We recommend minimum 18- inch thickness for the mat foundation. The edge of the mats shall be deepened for minimum embedment of 18-inches below lowest adjacent finished grade. The weight of concrete can be ignored in the design.

We estimate that the total and differential settlement of new mat foundations constructed per recommendations in this report should be on the order of less than 1-inch.

4.2.7 Deep Foundations

The proposed reservoir tank may be supported on deep foundations to meet the setback requirements and increase the stability of the site. A cast-in-drilled-hole (CIDH) pile foundation is feasible at the site considering. Length and diameter of the CIDH piles may be controlled by various load cases in either axial loading (compression or uplift) or lateral loading. The deep foundations should be extended at least 10 feet below the assumed critical failure, which is approximately 25 feet below the outer edge of the tank. The pile should have a minimum diameter of 18 inches and a minimum depth of 20 feet below site grade. The piles shall be spaced at a minimum of 3 times the diameter, but not exceeding 6 times the pile diameters. If pad footings are proposed, they shall span over a minimum of two piles.

Vertical Pile Capacity

Piles should be designed to resist anticipated vertical dead and live loads. For downward capacity, an allowable end bearing pressure of 8,000 pounds per square foot (psf) and average allowable skin friction of 300 psf are recommended. The end earing capacity and skin friction cannot be combined. For uplift resistance of the piles, we recommend an average friction value of 200 psf. These values may be increased by one-third (1/3) for temporary loads such as seismic and wind forces. The frictional resistance from upper 5 feet of the soil embedment should be neglected in calculating downward resistance.

The end bearing and skin friction shall not be combined in determining the pile capacity.

Lateral Pile Capacity

Pile foundation resistance to lateral loads will be provided by passive resistance of the soil against shafts, pile caps, and grade beams (if present) and by the bending stiffness of the pile shafts. The lateral resistance of a CIDH pile is a function of the surrounding soil strength and stiffness, size and stiffness of the pile, pile top connection, and induced moments and forces at the top of the pile. The ultimate passive pressure available in undisturbed native soil or compacted engineered fill may be taken as an equivalent fluid pressure of 300 pounds per cubic foot (pcf) acting on two pile diameters for the portion of the pile foundation embedded in firm soil. The passive pressure should be neglected on the upper buried 5-foot of the pile for passive pressure resistance. This passive pressure value is an ultimate value and the appropriate factor of safety for lateral load resistance will depend on the design condition and should be selected by the designer.

4.2.8 Pile Settlement

The total settlement of pile foundations for anticipated vertical load, established as recommended, is estimated to be on the order of 0.6 inch or less with maximum differential settlement on the order of 0.3 inch or less in static condition.

4.2.9 Construction Recommendations for Drilled Pile

- Shaft can be excavated using drilling bucket or flight augers. Dry drilling method may be used for shaft excavation as groundwater is not anticipated the proposed shaft depth. However, some possible minor seepage at shallow depth could occur during the rainfall season. Such minor seepage, if encountered, should not adversely impact the installation of the pile foundation, provided that the shaft is properly cased.
- Soft Rock is anticipated during drilling shafts; casing should be available onsite to facilitate supporting the excavations if needed.
- The drilled shaft should not be left open for any prolonged period of time, and each pile should be poured on the day it is drilled. The bottom of the drilled holes should be cleaned to remove as much loose soil as practical prior to placement of concrete.
- A representative from our firm should be present to observe drilled holes to confirm the soils encountered are capable of carrying the design loads and that bottom conditions are satisfactory prior to placing steel reinforcement.

- The steel reinforcement should be centered in the drilled hole. Concrete should be discharged vertically with a tremie pipe from the shaft bottom upward at a rate in which the tremie nozzle does not become separated from the placed concrete by more than three feet. Under no circumstances should concrete be allowed to free-fall against either the steel reinforcement or the sides of the excavation during construction.
- Sufficient vibration should be performed while the concrete is tremied to minimize voids and properly derive the frictional shaft surface to satisfy uplift design requirements.

The foundation excavations should be observed by qualified special inspection personnel to verify that the excavations are clean, and that the bearing fill soils or subgrade have not been disturbed.

4.3 Concrete Slab-on-grade

Design of the slab-on-grade supported on firm and non-yielding subgrade (compacted fill soils) may be designed based on a modulus of subgrade reaction of 70 pounds per cubic inch. Structural elements such as thickness, reinforcement, joint spacing should be selected based on the anticipated loading, the modulus of subgrade reaction, and following minimum geotechnical recommendations.

The concrete slabs-on-grade shall have a minimum thickness of 4 inches and be reinforced with #4 reinforcing bars placed at 16 inches on-center each way. It is recommended that a minimum 6-inch-thick layer of granular material (crushed rock) underlie the concrete pavement. This base layer should be compacted and should exhibit a firm and unyielding condition prior to concrete placement.

4.4 Lateral Earth Pressure Parameters

The lateral earth pressure behind retaining structures depends primarily on the allowable movement, type of backfill materials, backfill slopes, wall inclination, surcharges, and any hydrostatic pressures. The lateral pressures can be calculated based on densities expressed as Equivalent Fluid Pressures (EFP). At rest pressure and active pressure should be used in the design of non-yielding and yielding walls, respectively. For the soils encountered at the site, the recommended lateral pressures are presented in Table 3.

Table 3: Lateral Earth Pressure Parameters

Parameter	**Backfill Slope (horizontal to vertical)**		
	Level	**3:1 slope**	**2:1 slope**
Active pressure (EFP)	48 pcf	55 pcf	72 pcf
At rest pressure (EFP)	60 pcf	80 pcf	90 pcf
Ultimate Passive Resistance (EFP)	300 pcf, Maximum Passive Resistance = 3,000 psf (Recommended min. factor of safety 1.5)		

Lateral loads may be resisted by soil friction on the footings and by the passive resistance of the soils. A coefficient of friction of 0.30 may be used between the footings and the supporting soils. Passive resistance shall not be considered for the upper 60 inches of soil near the slope.

The recommended equivalent fluid pressures assume that constantly functioning drainage systems are installed between retaining structure and soil backfill to prevent the accidental buildup of hydrostatic pressures and lateral stresses more than those stated. If a functioning drainage system is not installed, hydrostatic pressures calculated with the unit weight of water (62.4 pcf) should be added to these earth pressures to obtain the total stresses for design.

4.5 Seismic Design Parameters

Seismically resistant structural design in accordance with local building ordinances should be followed during the design of all structures. Per local geologic condition, the site subsurface consists of bedrock. Therefore, the site is classified as Site Class C: Very dense soil and soft rock. The following table summarizes site-specific design parameters obtained from the 2019 California Building Code, Chapter 16 Structural Design, Section 1613 Earthquake Loads. The data was calculated using the computer-based U.S. Seismic Design Maps, provided by the USGS. The values presented below are for the risk-targeted maximum considered earthquake (MCE_R).

Table 4: Seismic Design Parameters

Parameter	Value
Site Class	C
Seismic Design Category (SDC)	D
Mapped Spectral Response Acceleration-Short Period (0.2 Sec), (S_S)	1.871 g
Mapped Spectral Response Acceleration-1 Second Period, (S_1)	0.663 g
Adjusted Spectral Response Acceleration @ 0.2 Sec. Period, (S_{MS})	2.245 g
Adjusted Spectral Response Acceleration @ 1Sec.Period, (S_{M1})	0.936 g
Design Spectral Response Acceleration @ 0.2 Sec. Period, (S_{DS})	1.497 g
Design Spectral Response Acceleration @ 1-Sec. Period, (S_{D1})	0.624 g
Mapped Maximum Considered Earthquake (MCE) Geometric Mean Peak Ground Acceleration (PGA), per ASCE 7-10	0.808 g
Site Coefficient (F_{PGA})	1.2
MCE Geometric Mean Peak Ground Acceleration (PGA_M), per ASCE 7-10	0.969 g

Conformance to the criteria in the table above for seismic design does not constitute any guarantee or assurance that significant structural damage or ground failure will not occur if a large earthquake occurs. The primary goal of seismic design is to protect life and not to avoid all damage, as such design may be economically prohibitive.

4.6 Utility Trench Backfills

The backfill material immediately around a utility line and to a point 12 inches above the line should consist of sand, fine-grained gravel, or cement slurry to support the line and protect it during compaction. If fine-grained gravel or sand are used, they should meet the specifications given in the latest edition of the "Standard Specifications for Public Works Construction" (Greenbook). The sand or gravel should be compacted in accordance with Greenbook specifications.

Above the bedding, utility trench backfill soils should be mechanically compacted to a minimum 90 percent of the maximum dry density of the soils up to the finished ground surface. Flooding should not be permitted. At least the upper 24 inches of the trench backfill should consist of the same soils as are adjacent to the trench.

4.7 Site Drainage

Drainage and flow control measures should be incorporated for proper storm water conveyance off site. The reservoir tank and other structures shall be placed at an elevated gradient within the site and positive surface drainage away from the structures shall be incorporated into the site grading plans.

No runoff shall be directed over the slope surface. Adequate drainage facilities shall be provided to prevent surface erosion and saturation of surface soils. Berms, interceptor drains, swales or other drainage devices shall be provided at the top of slopes to prevent surface waters form overflowing onto the slope.

4.8 Flexible Pavement

For the design of asphalt concrete pavement, assume R-Value of 13 for subgrade soil and an R-Value of 78 for the base materials (Caltrans AB Class 2) was used. The recommended asphalt pavement sections for various traffic indices (TIs) are presented in the table below. An appropriate traffic index (TI) should be selected by the project civil engineer.

Table 5: Asphalt Pavement Design

Traffic Index	Minimum Asphalt Thickness (in.)	Minimum Base Course Thickness (in.)
4 - 5	4	10
6 – 7	4	14
8 – 9	6	18

Prior to placing the base materials, the upper 12 inches of the subgrade soil should be scarified, moisture conditioned as necessary, and recompacted to a minimum 90 percent of maximum dry density determined per Modified Proctor Compaction test (ASTM D1557) at near optimum moisture content (per ASTM D1557). Base course material shall consist of ¾ inch Aggregate Base, Class 2 material, Crushed Miscellaneous Base (CBM), or equivalent and should be compacted to a minimum of 95 percent relative compaction (per ASTM D 1557).

5 CONSTRUCTION OBSERVATIONS

The firm should also be retained to perform on-site construction observations and testing to ascertain those conditions correspond to the findings and conclusions presented herein and that construction generally conforms to the recommendations presented herein. If variations in subsurface soil conditions become evident during construction, the recommendations presented herein may warrant a revision. The geotechnical and geological consultants should be called for testing and observations as indicated in this report and at least for the following:

1. All excavation bottoms should be observed by a geotechnical representative prior to fill placement.
2. Foundation excavations should be observed by a representative of this firm prior to the placement of forms, reinforcement or concrete to verify embedment into the required bearing material.
3. Structural fill and backfill should be placed and compacted during continuous observation and testing. For fill soils placed on the site, we recommend that a minimum of one in-place field density test be conducted for every 2-foot of compacted layer placed.
4. Observation and testing of utility trenches beneath and adjacent to structures.

Please notify this office 48 hours in advance of any required sampling or observations, so that the appropriate personnel can be made available.

6 CONSTRUCTION PLANS AND SPECIFICATION REVIEW

We recommend that ABI Engineering Consultants, Inc. be retained to perform a review of the foundation and earthwork plans and specifications prepared from the recommendations presented in this report to determine if the plans and specifications are in compliance with the intent of our recommendations. Our report has been written in a guideline recommendation format and is not appropriate for use as a specification without being reworded into a specification-type format.

7 LIMITATIONS

The recommendations provided in this report are based on our understanding of the subject property to, and on our interpretation of the data collected. We have made our recommendations based on experience with similar subsurface conditions under similar development conditions. These recommendations apply to the project specifically discussed in this report; therefore, any changes in load conditions or site grades should be provided to us so that we may review our conclusions and recommendations and make any necessary modifications. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report. The report has not been prepared for use by other parties and may not contain sufficient information for purposes of other parties or other uses.

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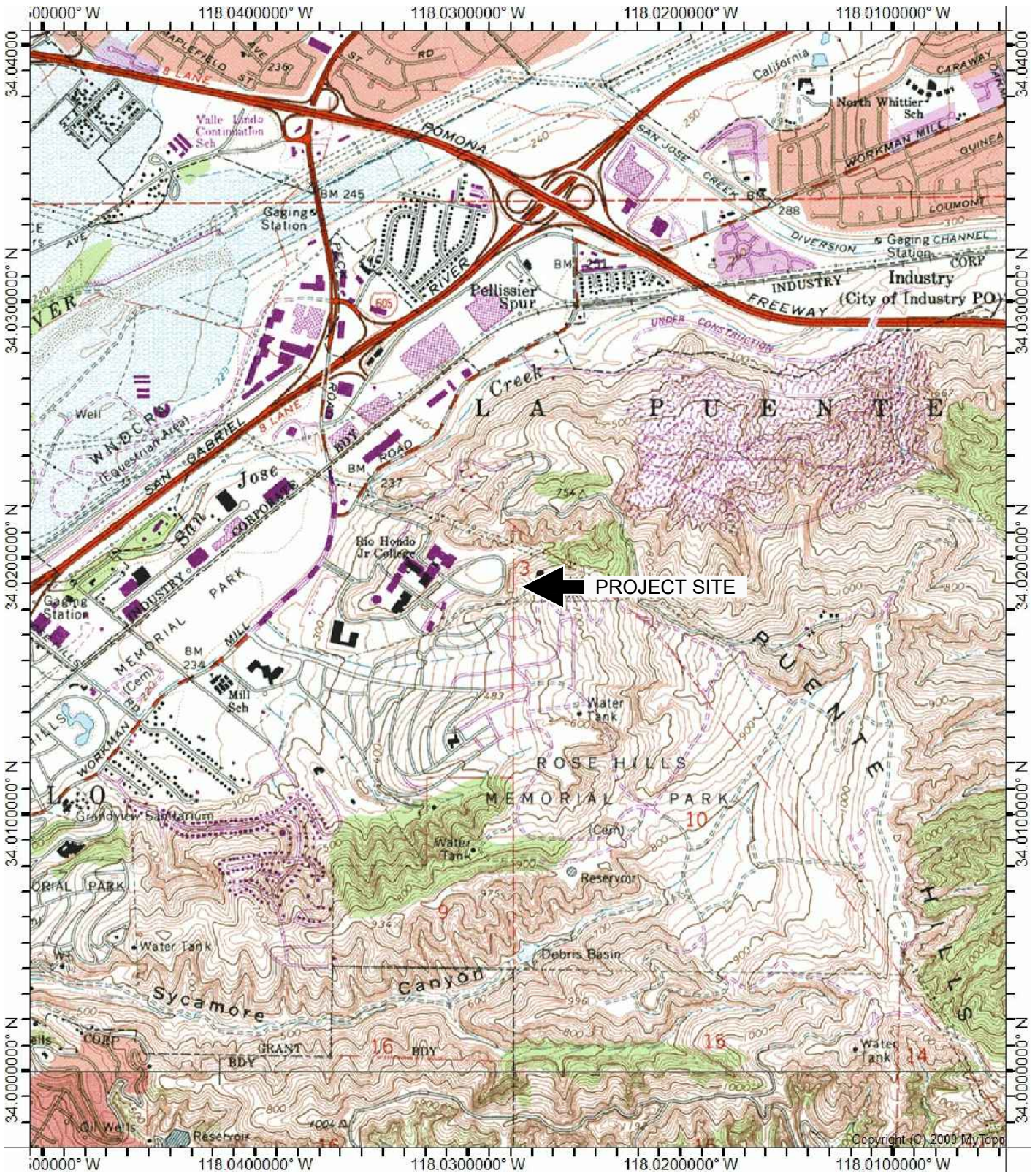
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FIGURES



SITE VICINITY MAP
El Monte, California, 1966
Photorevised 1994

SCALE 1:24000

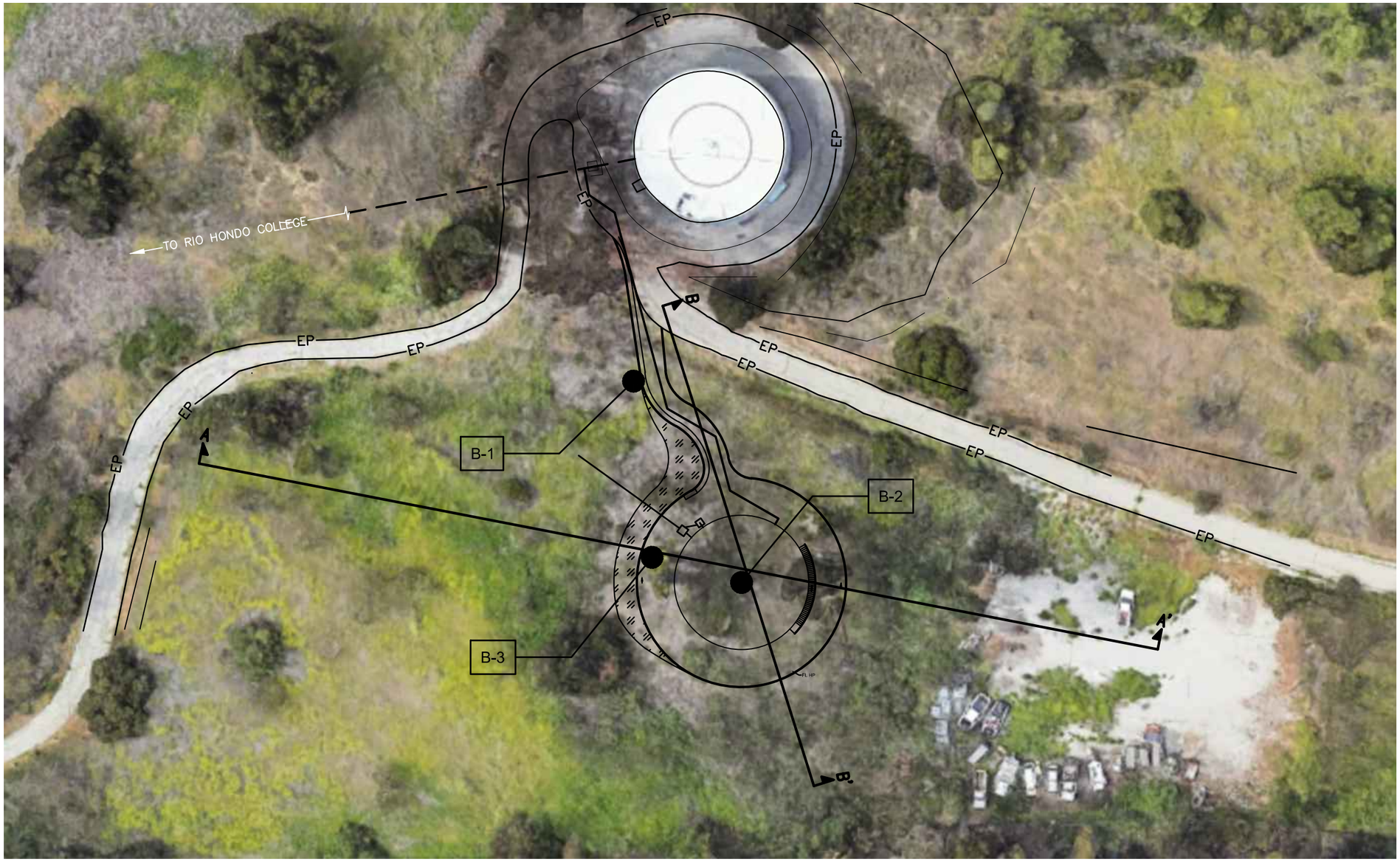
NORTH

PROJECT: PLANT 7 - SGVWC
3600 WORKMAN MILL ROAD
WHITTIER, CALIFORNIA

PROJECT NO: 21126

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FIGURE
1



LEGEND

B-X — APPROX. BORING LOCATION AND NUMBER

A — A' CROSS SECTION

— ? — APPARENT DIP

GRAPHIC SCALE

50 0 50 100

1 INCH = 50 FEET

NORTH

SITE AERIAL MAP

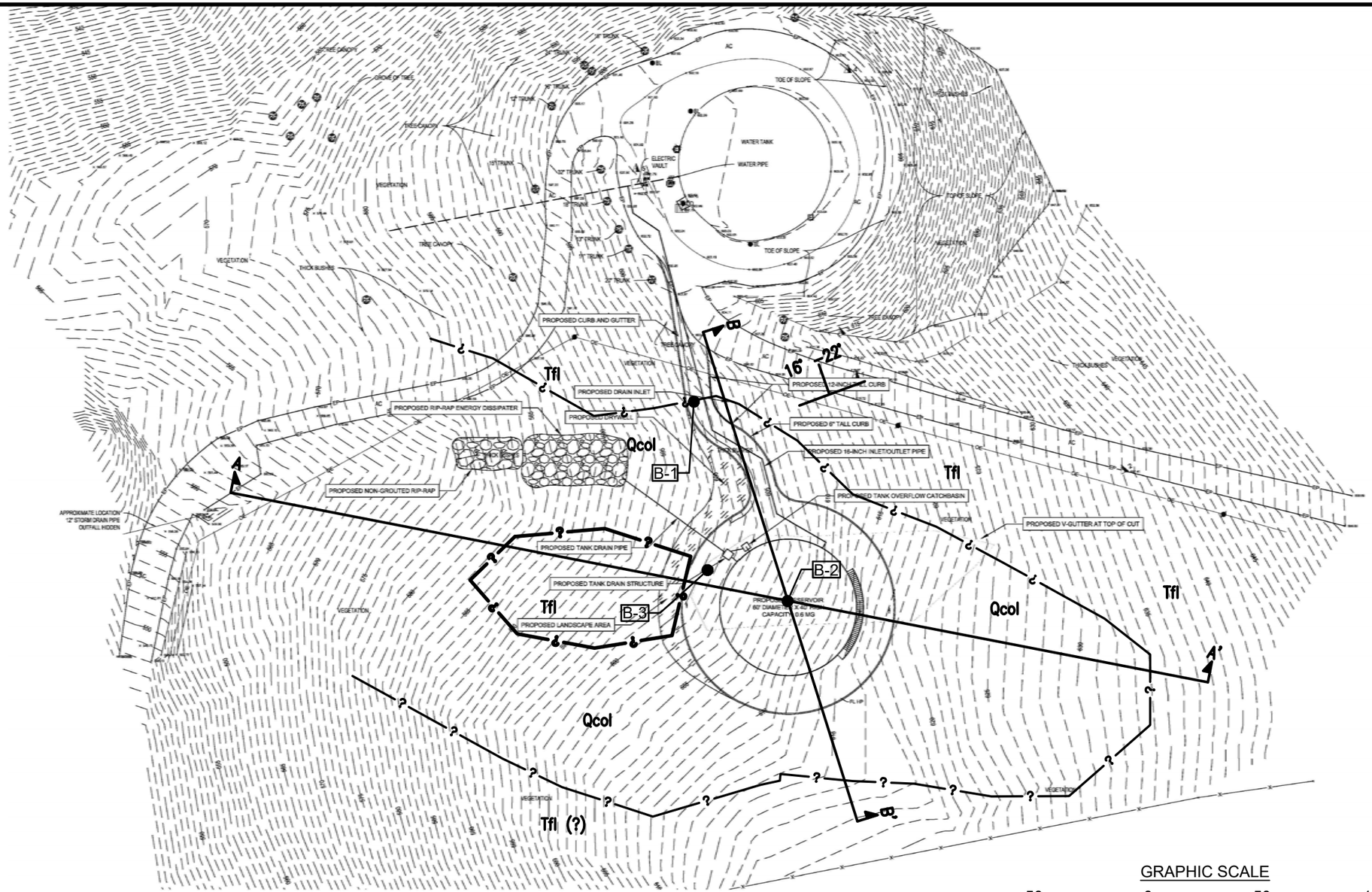
Scale: 1" = 50'

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FIGURE 2



GRAPHIC SCALE

50 0 50 100

1 INCH = 50 FEET

NORTH

LEGEND

Qcol	HOLOCENE AGE, COLLUVIUM
Tfl	PLIOCENE AGE, FERNANDO FORMATION CLAYSTONE AND MUDSTONE
B-X	APPROX. BORING LOCATION AND NUMBER
A — A'	CROSS SECTION
	BEDDING ATTITUDE
— ? —	APPARENT DIP

SITE GEOLOGIC MAP

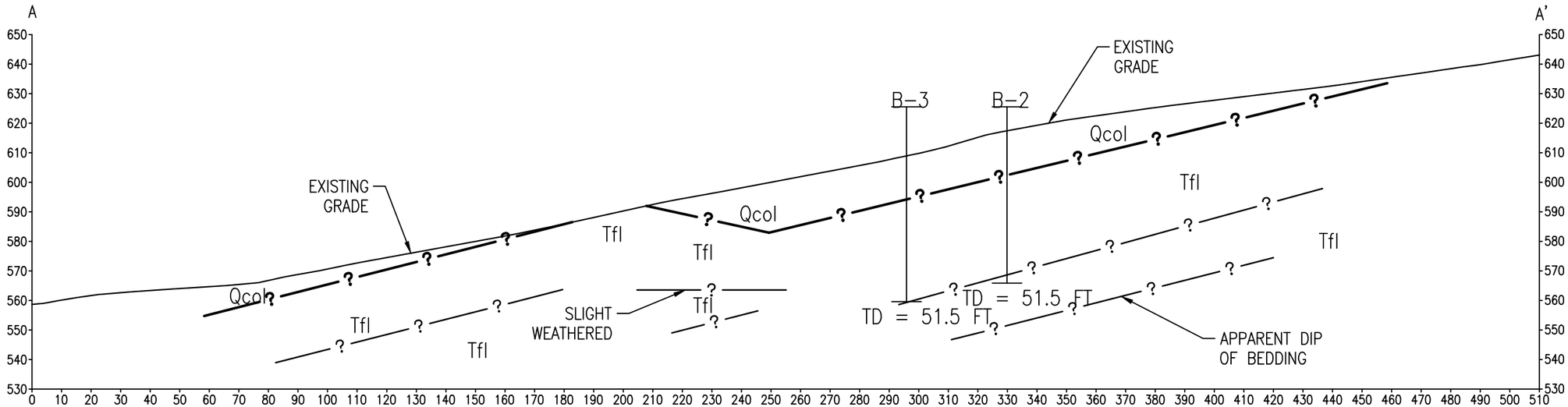
Scale: 1" = 50'

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FIGURE 3



SECTION A–A'
SCALE: 1" = 40'

GRAPHIC SCALE

40 0 40 80

1 INCH = 40 FEET

LEGEND

Qcol	HOLOCENE AGE, COLLUVIUM
Tfl	PLIOCENE AGE, FERNANDO FORMATION CLAYSTONE AND MUDSTONE
TD	TOTAL DEPTH
A A'	CROSS SECTION
?	APPARENT DIP

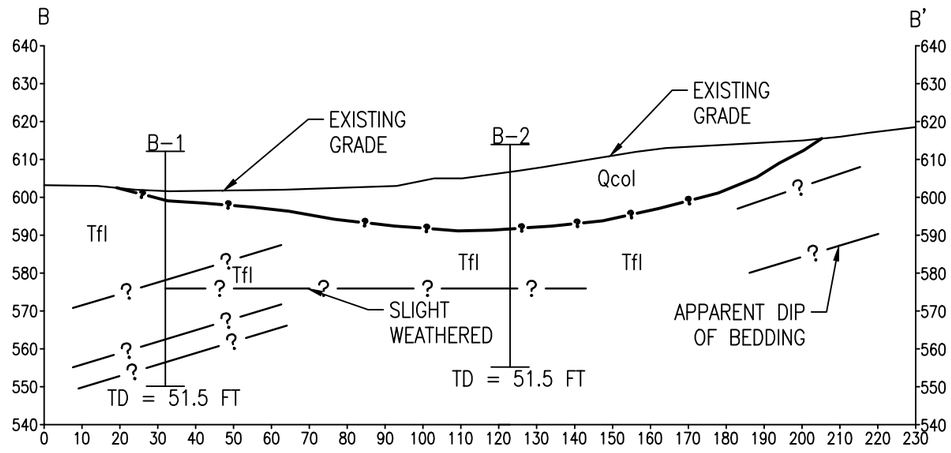
CROSS SECTION A-A'
Scale: 1" = 50'

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FIGURE
4



SECTION B–B'
SCALE: 1" = 40'

GRAPHIC SCALE

40 0 40 80

1 INCH = 40 FEET

LEGEND

Qcol	HOLOCENE AGE, COLLUVIUM
Tfl	PLIOCENE AGE, FERNANDO FORMATION CLAYSTONE AND MUDSTONE
TD	TOTAL DEPTH
B B'	CROSS SECTION
?	APPARENT DIP

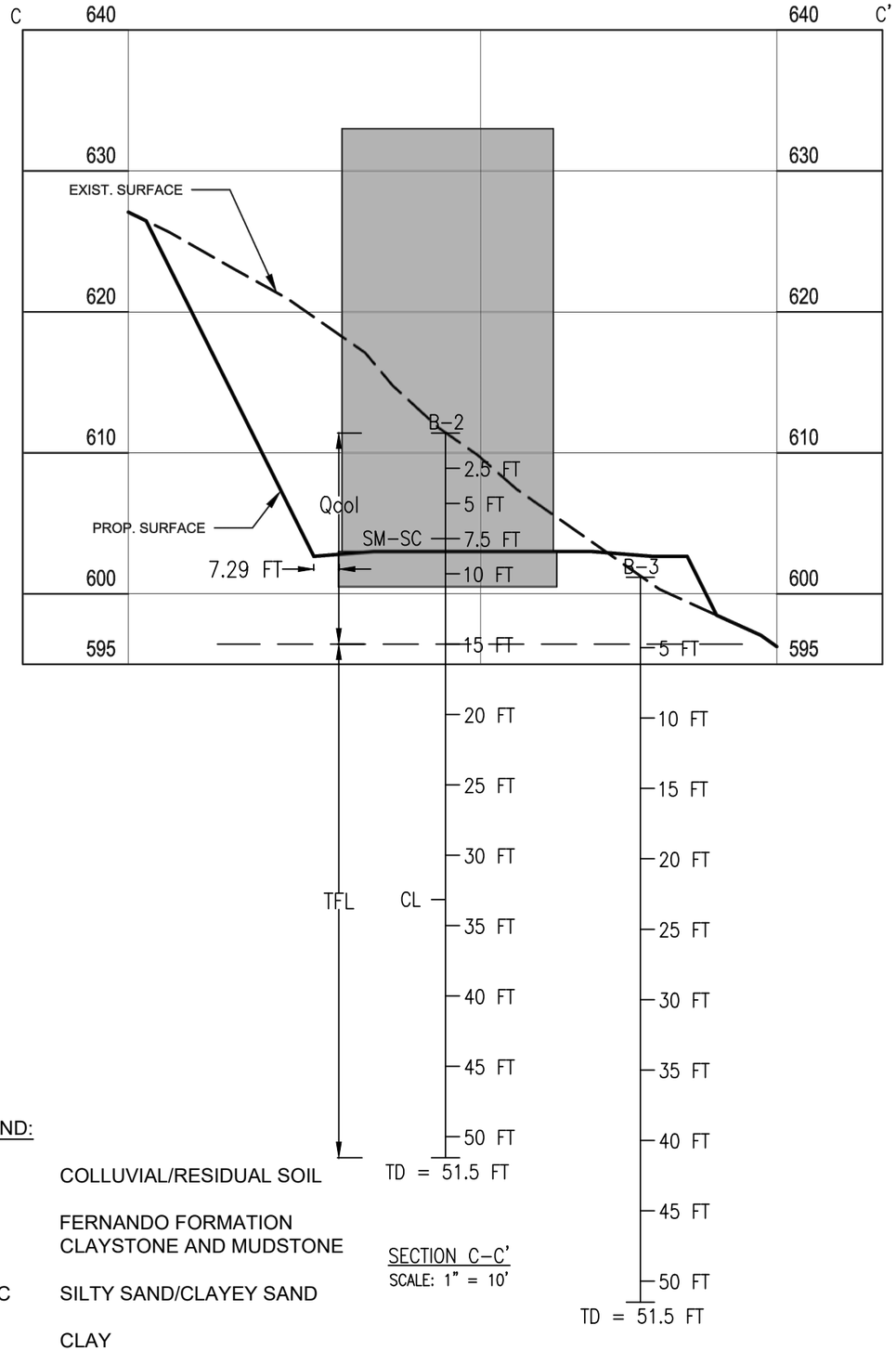
CROSS SECTION B-B'
Scale: 1" = 40'

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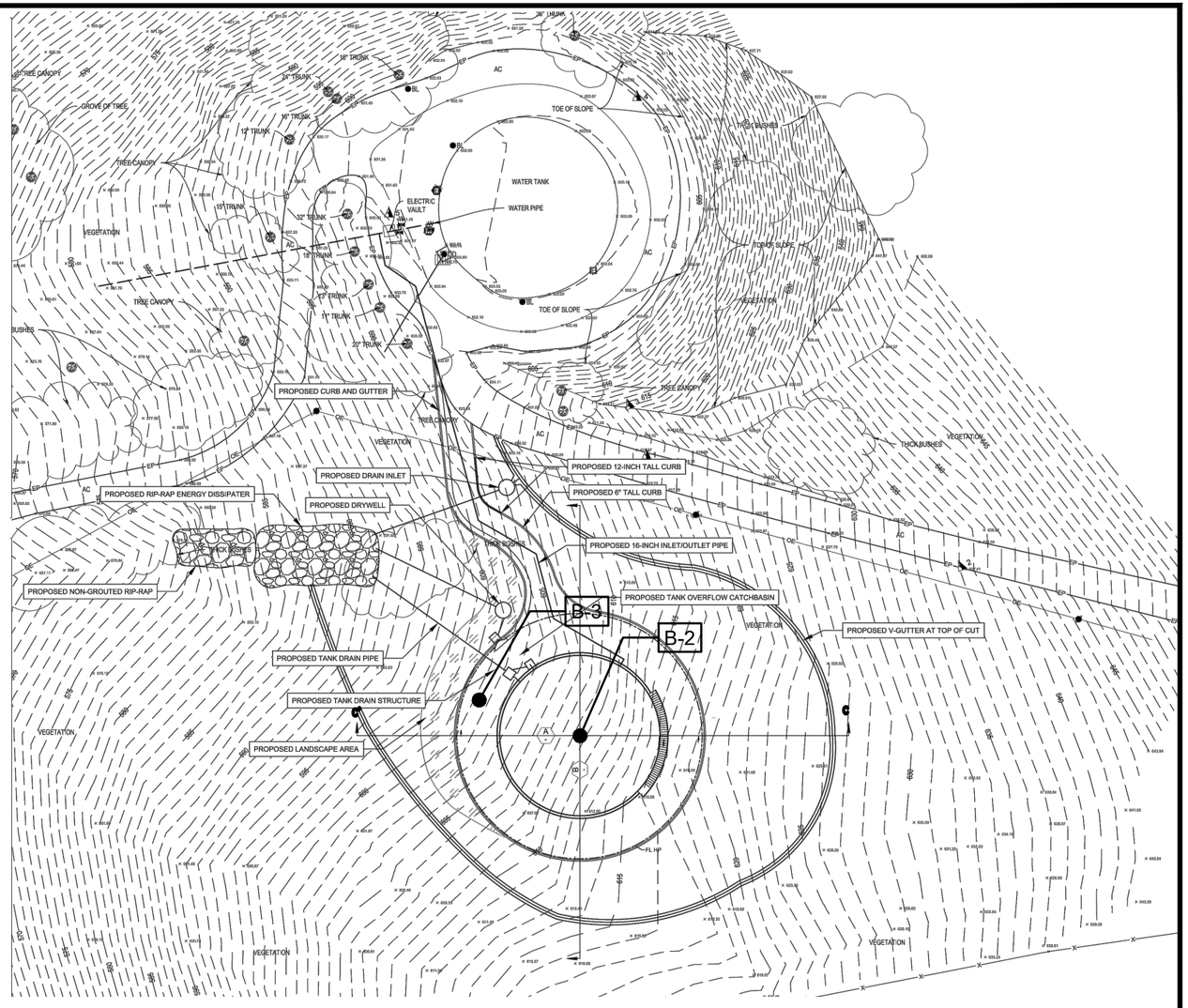
FIGURE
5



SECTION C–C'
SCALE: 1" = 10'

LEGEND:

Qcol	COLLUVIAL/RESIDUAL SOIL
TFL	FERNANDO FORMATION CLAYSTONE AND MUDSTONE
SM-SC	SILTY SAND/CLAYEY SAND
CL	CLAY



SITE PLAN
SCALE: 1" = 20'

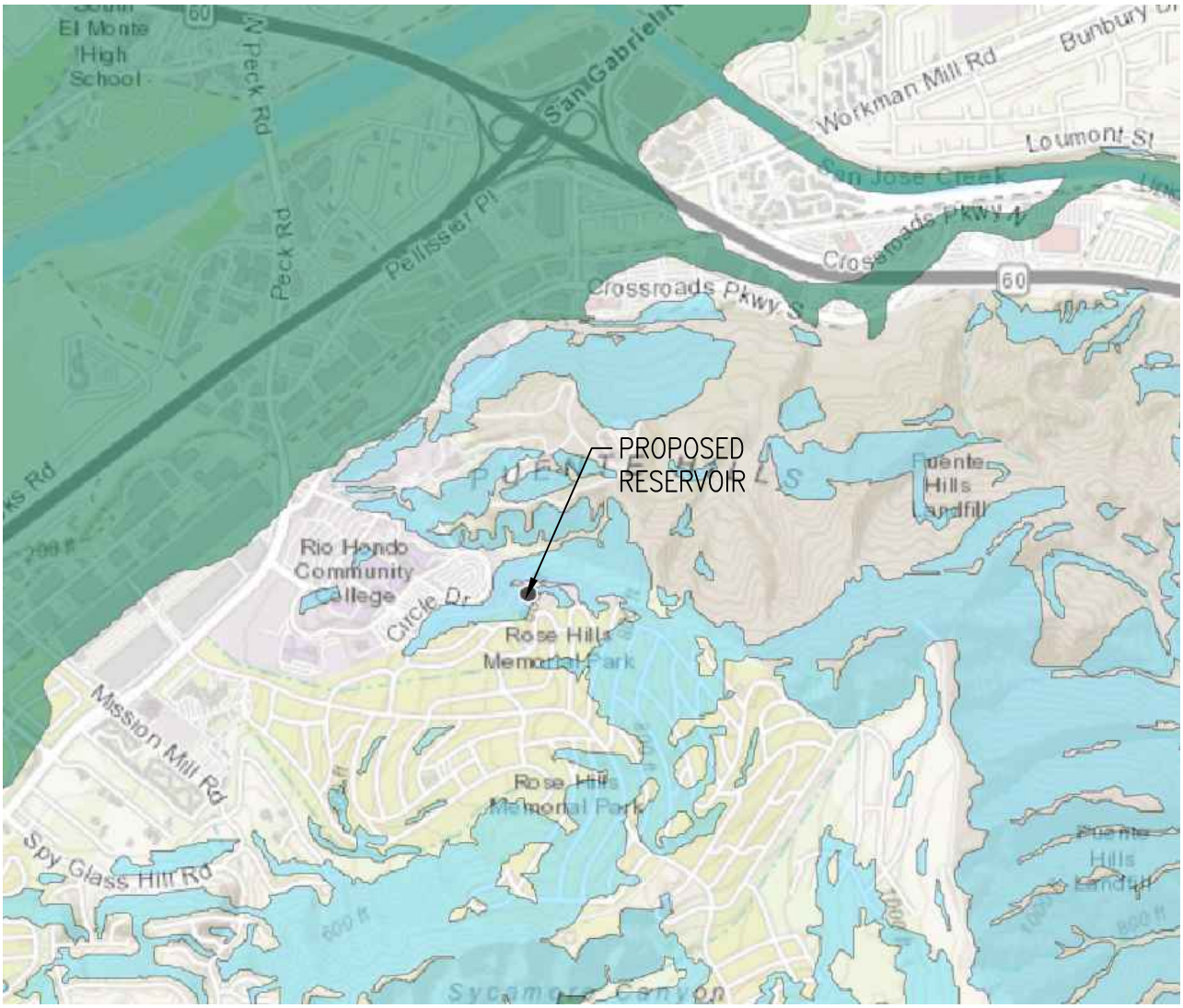
GEOLOGIC CROSS SECTION - PROPOSED TANK

NORTH

PROJECT:	PLANT 7 - SGVWC 3600 WORKMAN MILL ROAD WHITTIER, CALIFORNIA
PROJECT NO:	21126

ABI ENGINEERING CONSULTANTS, INC.
1701 EAST EDINGER AVENUE, SUITE A9
SANTA ANA, CALIFORNIA 92705
TEL: (888) 220-5596
FAX: (714) 866-4171

FIGURE
6



SOURCE:
CALIFORNIA GEOLOGIC SURVEY,
EARTHQUAKE ZONES OF REQUIRED
INVESTIGATION, EL MONTE QUADRANGLE

SEISMIC HAZARD ZONES

Liquefaction Zones
Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslide Zones
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

SEISMIC HAZARD MAP
Not to Scale

NORTH

PROJECT: PLANT 7 - SGVWC
3600 WORKMAN MILL ROAD
WHITTIER, CALIFORNIA

PROJECT NO: 21126

ABI ENGINEERING CONSULTANTS, INC.
1701 EAST EDINGER AVENUE, SUITE A9
SANTA ANA, CALIFORNIA 92705
TEL: (888) 220-5596
FAX: (714) 866-4171

FIGURE
7

APPENDIX A

BORING LOGS

Project: **Plant 7 - SGVWC** Project Location: **Whitter, CA** Project Number: **21126**	Log of Boring B-1 **Sheet 1 of 2**

Date(s) Drilled **09/08/2021**	Logged By **JR**	Checked By **DB**
Drilling Method **HSA**	Drill Bit Size/Type **8"**	Total Depth of Borehole **51.5 feet bgs**
Drill Rig Type **Limited Access Rig**	Drilling Contractor **Cal Pac**	Approximate Surface Elevation **600 ft MSL**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140 LB, 30-inch autotrip**
Borehole Backfill **Soil Cuttings**	Location **34 1' 9" N 118 1' 40" W**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines	LL, %	PI, %	REMARKS AND OTHER TESTS
600	0		B1@0-5'		Fill		4"-6" loose soil				47.13		
					SC-CL		Colluvial/Residual Soil (Qcol), sandy						
			B1@2.5'	50-5"			SILT/CLAY (CL), light brown, dry to moist, medium plastic, hard						
595	5		B1@5-10'	6	SC-CL		@ 5' = grades to soft			93.9			
			B1@5'	5 5									
				7			Fernando Formation (Tfl), Claystone and mudstone; weathered to soil fraction Clay (CL), yellow brown, medium soft, dry						
			B1@7.5'	9 11				15.7	98.9				
590	10		B1@10'	7 13 22	SC-CL		becomes light brown, stiff						
585	15		B1@15'	14 50-6"	SC-CL		becomes moderate weathered, yellowish brown to brown, hard	18.6	98.7				
580	20		B1@20'	16 21 34	SC-CL		grades become hard						
575	25		B1@25'	10 50-6"	SC-CL		grades slight weathered						
570	30												

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Project: **Plant 7 - SGVWC**
Project Location: **Whitter, CA**
Project Number: **21126**

Log of Boring B-1
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines	LL, %	PI, %	REMARKS AND OTHER TESTS
570	30		B1@30'	20 35 50-5"	CL		CLAY, gray, few organics, moist, medium plastic						
565	35		B1@35'	7 30 50-3"	CL								
560	40		B1@40'	13 25 39	CL		@ 40' = bedding plane with 22° dip						
555	45		B1@45'	11 50-5"	CL								
550	50		B1@50'	18 35 50-6"			@ 51' = bedding plane with 16° dip						
							End of Boring @ 51.5'. No ground water encountered Borehole Backfilled with soil cuttings.						
545	55												
540	60												

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Project: **Plant 7 - SGVWC**
Project Location: **Whitter, CA**
Project Number: **21126**

Log of Boring B-2
Sheet 1 of 2

Date(s) Drilled **09/08/2021**	Logged By **JR**	Checked By **DB**
Drilling Method **HSA**	Drill Bit Size/Type **8"**	Total Depth of Borehole **51.5 feet bgs**
Drill Rig Type **Limited Access Rig**	Drilling Contractor **Cal Pac**	Approximate Surface Elevation **610 ft MSL**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140 LB, 30-inch autotrip**
Borehole Backfill **Soil Cuttings**	Location **34 1' 8" N 118 1' 39" W**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines	LL, %	PI, %	REMARKS AND OTHER TESTS
610	0		B2@0-5'		Fill		4"-6" loose soil (Organics)				52		
					SM-SC		Colluvial/Residual Soil (Qcol), SAND						
			B2@2.5'	5 5 6			SAND, brown, trace silt/clay, dry to moist, low plastic, medium soft						
605	5		B2@5'	4 8 12								33	
			B2@7.5'	9 9 9	SM-SC								
600	10		B2@10'	6 18 35	SM-SC		Becomes hard	13.3	112.7				
595	15		B2@15'	9 12 15	CL		Fernando Formation (Tfl); Claystone and mudstone; yellowish brown, moderate weathered; medium soft, plastic, dry						
590	20		B2@20'	12 27 50-5"	CL		Becomes stiff and slight weathered					32	
585	25		B2@25'	18 50-6"	CL		@ 25' = grades hard						
580	30												

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Project: **Plant 7 - SGVWC**
Project Location: **Whitter, CA**
Project Number: **21126**

Log of Boring B-2
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines	LL, %	PI, %	REMARKS AND OTHER TESTS
580	30		B2@30'	17 50-5"	CL								
575	35		B2@35'	14 31 50-4"	CL								
570	40		B2@40'	13 50-6"	CL		@ 40' = fine sand filling vertical joint						
565	45		B2@45'	No blow counts	CL								
560	50		B2@50'	14 33 48			End of Boring @ 51.5'. No ground water encountered Borehole Backfilled with soil cuttings.						
555	55												
550	60												

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Project: **Plant 7 - SGVWC** Project Location: **Whitter, CA** Project Number: **21126**	Log of Boring B-3 **Sheet 1 of 2**

Date(s) Drilled **09/08/2021**	Logged By **JR**	Checked By **DB**
Drilling Method **HSA**	Drill Bit Size/Type **8"**	Total Depth of Borehole **51.5 feet bgs**
Drill Rig Type **Limited Access Rig**	Drilling Contractor **Cal Pac**	Approximate Surface Elevation **600 ft MSL**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California**	Hammer Data **140 LB, 30-inch autotrip**
Borehole Backfill **Soil Cuttings**	Location **34 1' 8" N 118 1' 39" W**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines	LL, %	PI, %	REMARKS AND OTHER TESTS
600	0				Fill		4"-6" loose soil (Organics)						
					CL		Colluvial/Residual Soil (Qcol), Clay (CL); brown loose, dry						
							Fernando Formation (Tfl); weathered to soil fraction Clay (CL); yellowish brown, soft, dry						
595	5		B3@5-10' B3@5'	6 9 14	CL		@ 5' = grades medium soft and moderate weathered	15.3	107.4		42		
590	10		B3@10'	9 11 17	CL		becomes claystone and mudstone; very stiff	15.0	96.5				
585	15		B3@15'	11 23 31	CL		becomes stiff and slight weathered	17.5	108.1				
580	20		B3@20'	10 16 26	CL			21.2	100.5		47		
575	25		B3@25'	12 18 30	CL			24.8	103.4				
570	30												

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Project: **Plant 7 - SGVWC**
Project Location: **Whitter, CA**
Project Number: **21126**

Log of Boring B-3
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines	LL, %	PI, %	REMARKS AND OTHER TESTS
570	30		B3@30'	13 29 50-4"	CL		Becomes hard, grayish brown						
565	35		B3@35'	13 27 34	CL			24.5	105.0				
560	40		B3@40'	16 40 50-5"	CL								
555	45		B3@45'	12 27 31	CL			19.7	109.0				
550	50		B3@50'	11 22 36			End of Boring @ 51.5'. No ground water encountered Borehole Backfilled with soil cuttings.						
545	55												
540	60												

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Project: **Plant 7 - SGVWC**
Project Location: **Whitter, CA**
Project Number: **21126**

Key to Log of Boring
Sheet 1 of 1

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines	LL, %	PI, %	REMARKS AND OTHER TESTS
1	2	3	4	5	6	7	8	9	10	11	12	13	14

COLUMN DESCRIPTIONS

1. Elevation (feet): Elevation (MSL, feet).
2. Depth (feet): Depth in feet below the ground surface.
3. Sample Type: Type of soil sample collected at the depth interval shown.
4. Sample Number: Sample identification number.
5. Sampling Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.
6. Material Type: Type of material encountered.
7. Graphic Log: Graphic depiction of the subsurface material encountered.
8. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
9. Water Content, %: Water content of the soil sample, expressed as percentage of dry weight of sample.
10. Dry Unit Weight, pcf: Dry weight per unit volume of soil sample measured in laboratory, in pounds per cubic foot.
11. Percent Fines: The percent fines (soil passing the No. 200 Sieve) in the sample. WA indicates a Wash Sieve, SA indicates a Sieve Analysis.
12. LL, %: Liquid Limit, expressed as a water content.
13. PI, %: Plasticity Index, expressed as a water content.
14. REMARKS AND OTHER TESTS: Comments and observations regarding drilling or sampling made by driller or field personnel.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS

Lean CLAY, CLAY w/SAND, SANDY CLAY (CL)
AF
Silty to Clayey SAND (SM-SC)

TYPICAL SAMPLER GRAPHIC SYMBOLS

Auger sampler
Bulk Sample
3-inch-OD California w/ brass rings
3-inch-OD California with 2.42-inch-ID metal rings.
CME Sampler
Grab Sample
2.5-inch-OD Modified California w/ brass liners
Pitcher Sample
2-inch-OD unlined split spoon (SPT)
Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

Water level (at time of drilling, ATD)
Water level (after waiting)
Minor change in material properties within a stratum
Inferred/gradational contact between strata
Queried contact between strata

GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

APPENDIX B

GEOTECHNICAL LABORATORY TEST RESULTS

ABI ENGINEERING CONSULTANTS, INC.

MOISTURE AND DENSITY TEST RESULTS

Project Name: SGVWC Plant 7
Project No.: 21126
Location: Whittier, CA

Tested By: LA
Checked By: JW
Date 9/22/2021

Boring Number	Depth (ft.)	Sample Type*	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Remarks
B-1	7.5	Cal-Mod	114.3	15.7	98.9	
B-1	15	Cal-Mod	117.1	18.6	98.7	
B-2	10	Cal-Mod	127.7	13.3	112.7	
B-3	5	Cal-Mod	123.8	15.3	107.4	
B-3	10	Cal-Mod	111.0	15.0	96.5	
B-3	15	Cal-Mod	127.1	17.5	108.1	
B-3	20	Cal-Mod	121.7	21.2	100.5	
B-3	25	Cal-Mod	129.1	24.8	103.4	
B-3	35	Cal-Mod	130.8	24.5	105.0	
B-3	45	Cal-Mod	130.4	19.7	109.0	

* Cal-Mod: California Modified Sampler/Ring Sample

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GRADATION OF SOILS USING SIEVE ANALYSIS

(ASTM D 6913)

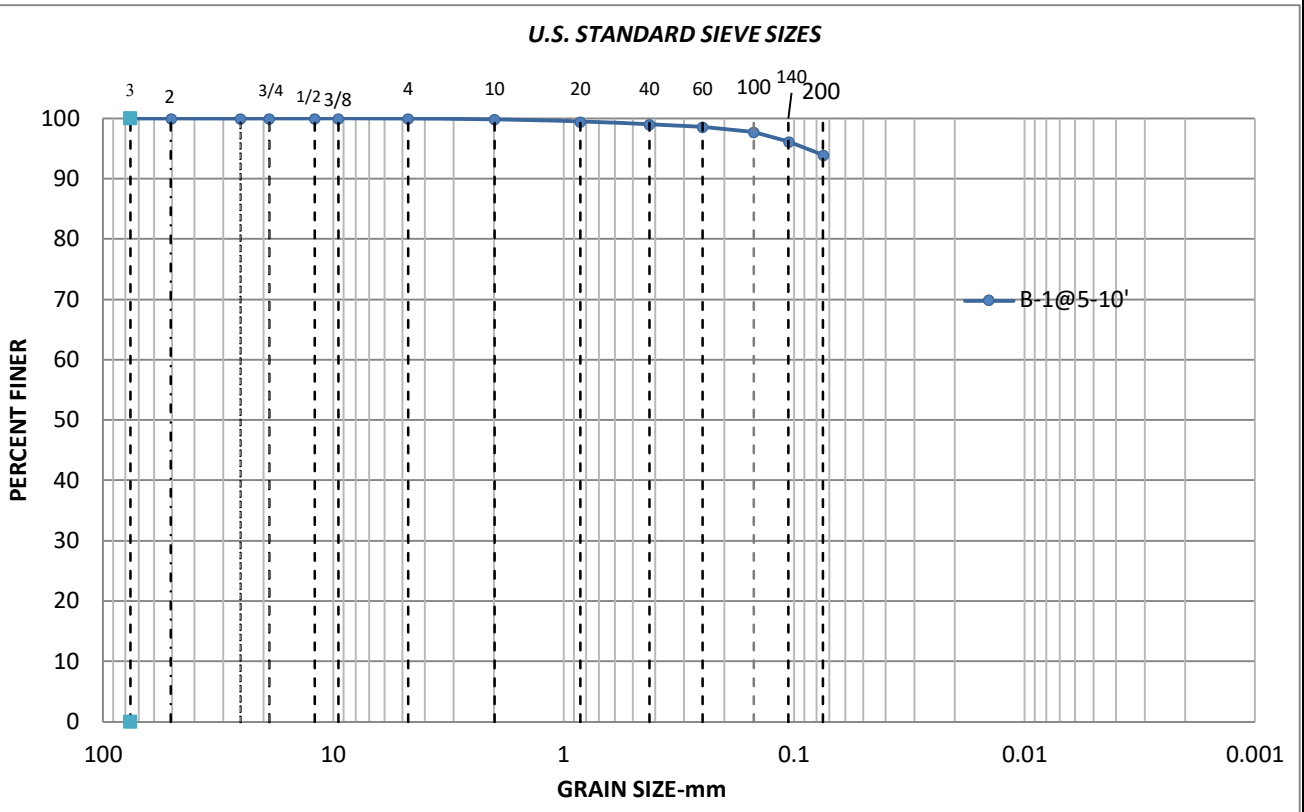
Project: SGVWC Plant 7
Project No.: 21126
Location: Whittier, CA

Tested By: LA
Checked By: JW
Date: 9/22/2021

Boring No: B-1 Depth (ft) : 5-10'
Sample ID/No.: B-1@5-10'

Soil Description (Visual): Clay (CL)

GRAVEL		SAND			FINES (SILT AND CLAY)
COARSE	FINE	COARSE	MEDIUM	FINE	



Percent Distribution

Sieve Designation	Percent Passing
3"	100.0
0.75"	100.0
#4	100.0
#20	99.8
#40	99.0
#200	93.9

Percent Distribution

	Coarse	Medium	Fine	Total
Gravel	0.0	-	0.0	0.0
Sand	0.2	0.8	5.1	6.1
Fines	93.9			

ABI ENGINEERING CONSULTANTS, INC.

GRADATION OF SOILS USING SIEVE ANALYSIS

(ASTM D 6913)

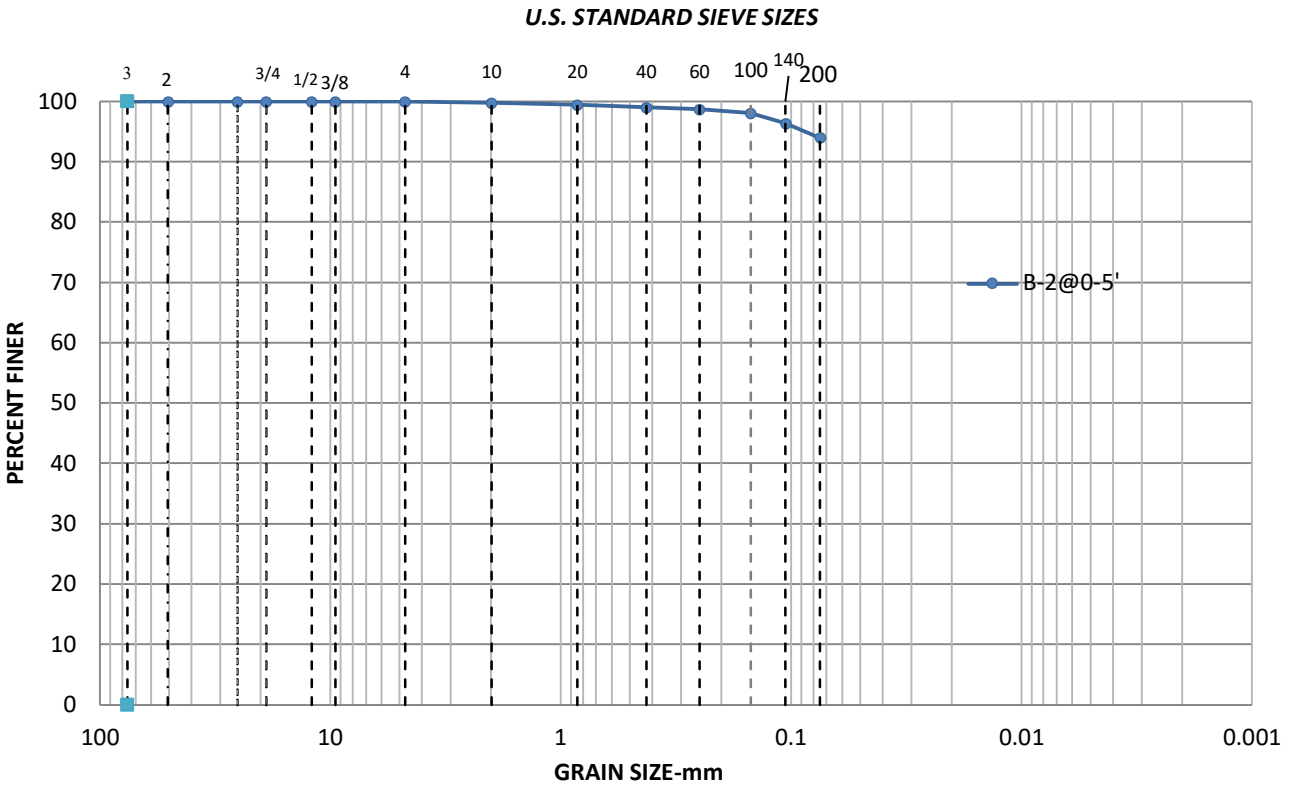
Project: SGVWC Plant 7
Project No.: 21126
Location: Whittier, CA

Tested By: LA
Checked By: JW
Date: 9/22/2021

Boring No: B-1 Depth (ft) : 0-5'
Sample ID/No.: B-2@0-5'

Soil Description (Visual): Clay (CL)

GRAVEL		SAND			FINES (SILT AND CLAY)
COARSE	FINE	COARSE	MEDIUM	FINE	



Percent Distribution

Sieve Designation	Percent Passing
3"	100.0
0.75"	100.0
#4	100.0
#20	99.8
#40	99.0
#200	94.0

Percent Distribution

	Coarse	Medium	Fine	Total
Gravel	0.0	-	0.0	0.0
Sand	0.2	0.7	5.0	6.0
Fines	94.0			

ABI ENGINEERING CONSULTANTS, INC.

PERCENT PASSING SEIVE #200

(ASTM D 1140)

Project Name: SGVWC Plant 7
Project No.: 21126 Tested By: LA Date: 9/2/2021
Project Location: Whittier, CA Checked By: JW Date: 12/7/2020

Boring Number	Sample Depth (ft.)	Sample ID/#	Test Method A or B	Soaking Time Length Hr:Min	Water Content	Max Size of Soil (mm)	Mass of Initial dry soil (g.)	Percent Passing # 200 (%)
B-1	0-5	B-1@0-5	B	2.0	8.1%	N/A	527.2	70.3%
B-3	0-5'	B-3@0-5'	B	2.0	7.0%	N/A	542.2	70.4%
B-6	0-5'	B-6@0-5'	B	2.0	12.2%	N/A	490.8	90.7%

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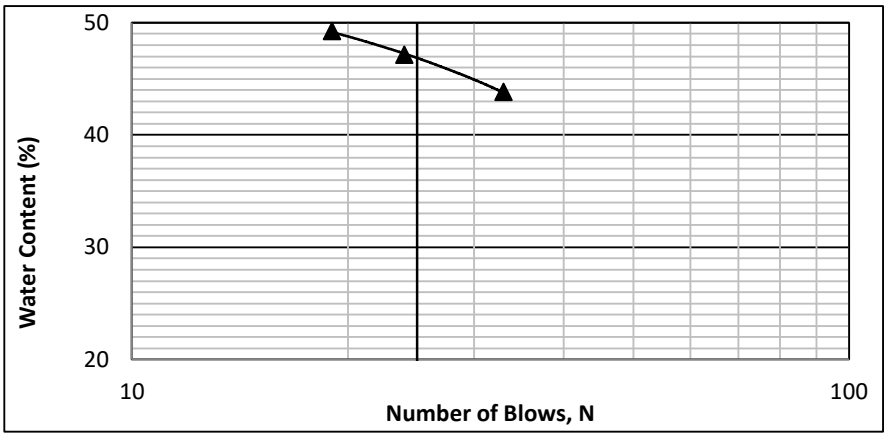
ATTERBERG LIMITS TEST DATA

(ASTM D 4318)

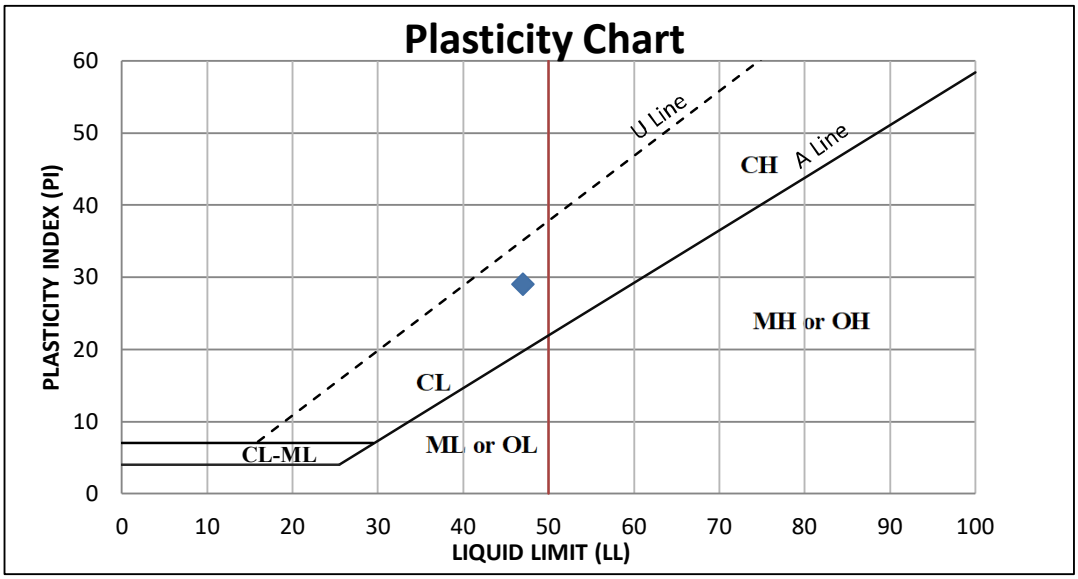
Project Name:	SGVWC Plant 7		Tested By: LA		Date: 9/16/2021
Project No.:	21126		Calculated By: HG		Date: 9/22/2021
Project Location:	Whittier, CA		Checked By: JW		Date: 9/22/2021
Boring No.	B-1	Sample ID/No:	B-1@5-10'	Specimen Preparation:	Wet/**Dry**
Depth:	5-10'	Lab. Sample ID:	210908-002	Rolling Method:	Hand
Procedure:	Dry/**Wet Preparation**	Method:	**Multipoint**	Type of Grooving Tool:	**Flat**/Curve

	Liquid Limit Detetmination				Plastic Limit Detetmination		
No. of Blows	**19**	**24**	**33**				
Can ID	M2	M18	M21		C14	C33	C37
Wt. of can (g)	30.12	30.11	30.32		14.25	14.08	14.1
Wt. of wet soil + can (g)	46.22	46.15	45.62		20.74	20.74	21.58
Wt. of dry soil + can (g)	40.91	41.01	40.96		19.76	19.72	20.42
Wt. of dry soil (g)	10.79	10.90	10.64		5.51	5.64	6.32
Wt. of Moisture (g)	5.31	5.14	4.66		0.98	1.02	1.16
Water Content, w %	**49.2**	**47.2**	**43.8**		**17.8**	**18.1**	**18.4**
Liquid Limit*	47.6	46.9	45.3		Average	18.1	

*For 1 point (N should be 15-30), use result from graph for multiple points test.



Liquid Limit (LL)	47
Plastic Limit (PL)	18
Plasticity Index (PI)	29
USCS Classification	CL



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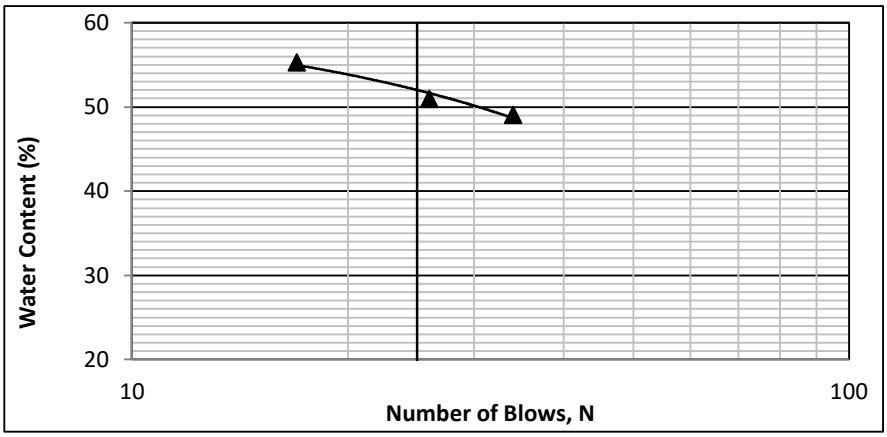
ATTERBERG LIMITS TEST DATA

(ASTM D 4318)

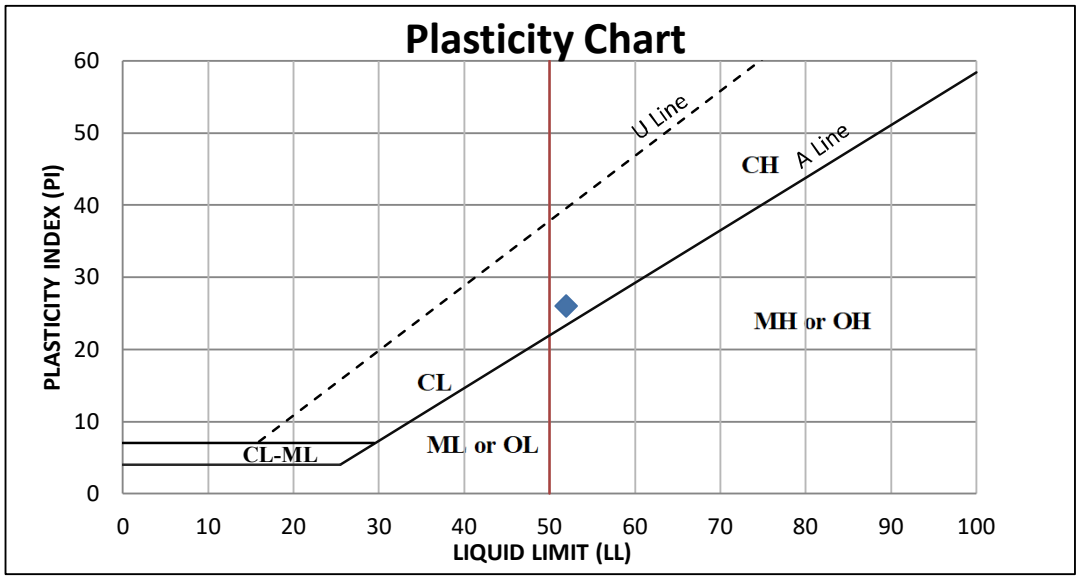
Project Name:	SGVWC Plant 7		Tested By: LA		Date: 9/16/2021
Project No.:	21126		Calculated By: HG		Date: 9/22/2021
Project Location:	Whittier, CA		Checked By: JW		Date: 9/22/2021
Boring No.	B-2	Sample ID/No:	B-2@0-5'	Specimen Preparation:	Wet/**Dry**
Depth:	0-5'	Lab. Sample ID:	210908-014	Rolling Method:	Hand
Procedure:	Dry/**Wet Preparation**	Method:	**Multipoint**	Type of Grooving Tool:	**Flat**/Curve

	Liquid Limit Detetmination				Plastic Limit Detetmination		
No. of Blows	**17**	**26**	**34**				
Can ID	M3	M5	M61		C13	C20	C38
Wt. of can (g)	30.53	30.35	30.25		14.06	14.23	14.11
Wt. of wet soil + can (g)	47.61	46.14	46.3		21.66	21.93	21.74
Wt. of dry soil + can (g)	41.53	40.81	41.02		20.13	20.31	20.15
Wt. of dry soil (g)	11.00	10.46	10.77		6.07	6.08	6.04
Wt. of Moisture (g)	6.08	5.33	5.28		1.53	1.62	1.59
Water Content, w %	**55.3**	**51.0**	**49.0**		**25.2**	**26.6**	**26.3**
Liquid Limit*	52.8	51.2	50.9		Average	26.1	

*For 1 point (N should be 15-30), use result from graph for multiple points test.



Liquid Limit (LL)	52
Plastic Limit (PL)	26
Plasticity Index (PI)	26
USCS Classification	CH



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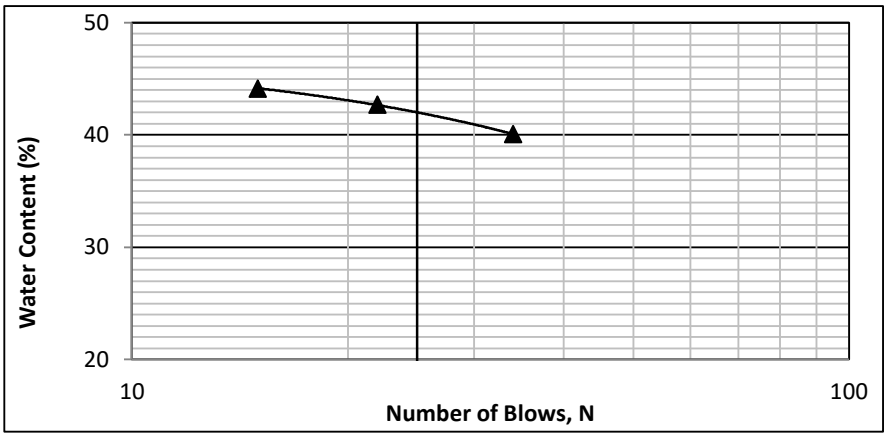
ATTERBERG LIMITS TEST DATA

(ASTM D 4318)

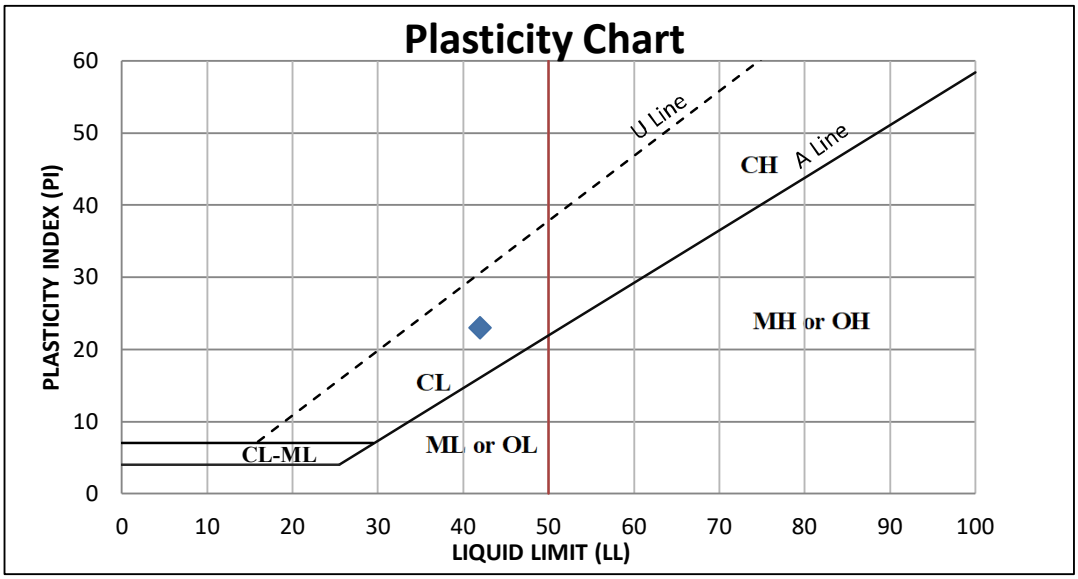
Project Name:	SGVWC Plant 7	Tested By:	LA	Date:	9/16/2021
Project No.:	21126	Calculated By:	HG	Date:	9/22/2021
Project Location:	Whittier, CA	Checked By:	JW	Date:	9/22/2021
Boring No.	B-3	Sample ID/No:	B-3@5-10'	Specimen Preparation:	Wet/**Dry**
Depth:	5-10'	Lab. Sample ID:	210908-029	Rolling Method:	Hand
Procedure:	Dry/**Wet Preparation**	Method:	**Multipoint**	Type of Grooving Tool:	**Flat**/Curve

	Liquid Limit Detetmination				Plastic Limit Detetmination		
No. of Blows	**15**	**22**	**34**				
Can ID	M11	M15	Z1		C1	C16	C56
Wt. of can (g)	30.2	30.34	30.34		14.01	14.08	14.05
Wt. of wet soil + can (g)	48.62	49.59	48.45		21.32	21.89	21.46
Wt. of dry soil + can (g)	42.98	43.83	43.27		20.18	20.62	20.26
Wt. of dry soil (g)	12.78	13.49	12.93		6.17	6.54	6.21
Wt. of Moisture (g)	5.64	5.76	5.18		1.14	1.27	1.20
Water Content, w %	**44.1**	**42.7**	**40.1**		**18.5**	**19.4**	**19.3**
Liquid Limit*	41.5	42.0	41.6		Average	19.1	

*For 1 point (N should be 15-30), use result from graph for multiple points test.



Liquid Limit (LL)	42
Plastic Limit (PL)	19
Plasticity Index (PI)	23
USCS Classification	CL



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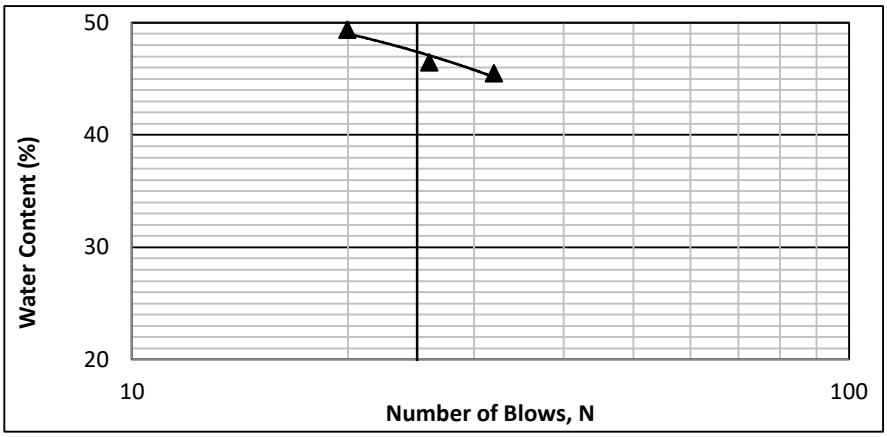
ATTERBERG LIMITS TEST DATA

(ASTM D 4318)

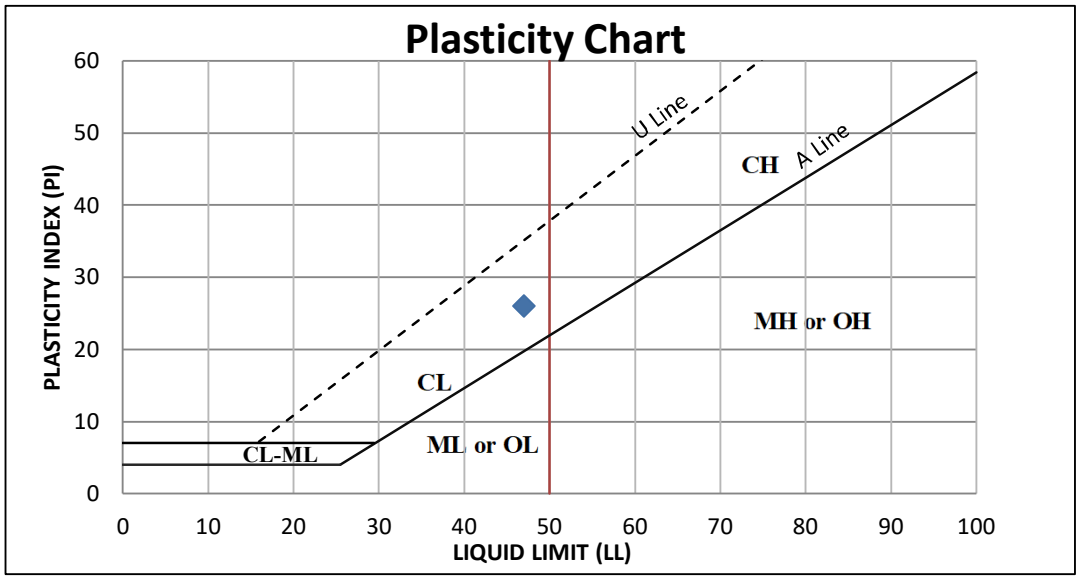
Project Name:	SGVWC Plant 7		Tested By: LA		Date: 9/16/2021
Project No.:	21126		Calculated By: HG		Date: 9/22/2021
Project Location:	Whittier, CA		Checked By: JW		Date: 9/22/2021
Boring No.	B-3	Sample ID/No:	B-3@20'	Specimen Preparation:	Wet/**Dry**
Depth:	20'	Lab. Sample ID:	210908-033	Rolling Method:	Hand
Procedure:	Dry/**Wet Preparation**	Method:	**Multipoint**	Type of Grooving Tool:	**Flat**/Curve

	Liquid Limit Detetmination				Plastic Limit Detetmination		
No. of Blows	**20**	**26**	**32**				
Can ID	M10	M13	M14		C53	C61	C63
Wt. of can (g)	30.42	30.21	30.41		14.11	13.83	13.96
Wt. of wet soil + can (g)	47.28	47.05	41.8		21.17	21.1	21.25
Wt. of dry soil + can (g)	41.71	41.71	38.24		19.93	19.86	20.03
Wt. of dry soil (g)	11.29	11.50	7.83		5.82	6.03	6.07
Wt. of Moisture (g)	5.57	5.34	3.56		1.24	1.24	1.22
Water Content, w %	**49.3**	**46.4**	**45.5**		**21.3**	**20.6**	**20.1**
Liquid Limit*	48.0	46.7	46.8		Average	20.7	

*For 1 point (N should be 15-30), use result from graph for multiple points test.



Liquid Limit (LL)	47
Plastic Limit (PL)	21
Plasticity Index (PI)	26
USCS Classification	CL



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EXPANSION INDEX TEST REPORT

(ASTM D4829)

Project : SGVWC Plant 7
Project No.: 21126
Project Location: Whittier,CA

Tested By: MM/JR
Checked By: DB
Report Date: 9/30/2021

Sample Information

Boring Number	B-2	-	-
Sample Depth (ft.)	5-10'		
Sample ID/#	-		

Soil Description

Soil type	SM-SC		
% greater than # 4 sieve	28.26		
% passing # 4 sieve	71.74		
As received water content (%)	12		
Specimen preparation method	Sieveing		

Specimen Data

Initial height, (in.)	1.000 in.		
Initial water content, (%)	12.93		
Initial dry unit weight, (pcf)	99.5		
Initial degree of saturation (%)	50.4		

Test Data:

Initial dial readings (in.)	-0.0009 in.		
Final dial readings (in.)	0.1114 in.		
Final water content, (%)	36.3		

Resulst:

Measured EI_{mea}		112		
Estimated EI_{50}		-		
Corrected $EI_{corrected}$		-		
Reported EI*		**112**		
Expansion Potential		**High**		

Note:

Expansive Classification	
Expansion Index (EI)	Potential Expansion
0-20	Very Low
21-50	Low
51-90	Medium
91-130	High
>130	Very High

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DIRECT SHEAR TEST RESULTS

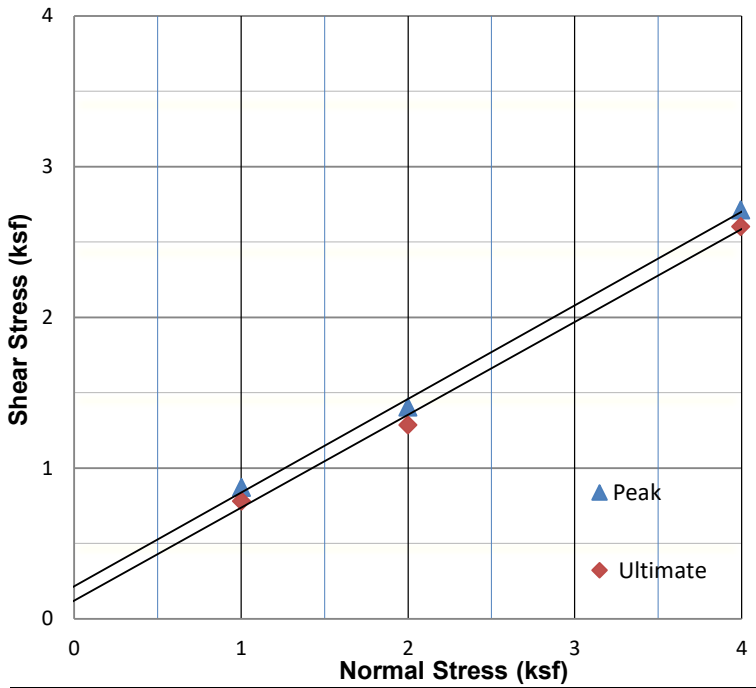
(ASTM D 3080)

Project Name: SGVWC Plant 7
Project No.: 21126
Project Location: Whittier, CA

Tested By : MM
Checked By : JW
Date : 3/3/2021

Boring No. B-2 Depth(ft): 20' Sample ID: 210226-011
Sample type: Cal -Mod
Soil description: CLAY (CL)

Shape of shear box: Circular
Diameter of shear box (in): 2.416
Initial specimen thickness (in): 1.000
Rate of shearing (in/min): 0.025



Strength Parameters

	Peak	Ultimate
Cohesion (psf)	216	122
Friction angle (degrees)	32	32

Remark

Specimen Data — Test number	1	2	3		
Wet density (pcf)	111.3	122.5	120.1		
Water content (%)	35.2	35.2	35.2		
Dry mass of test specimen (g)	99.1	109.1	106.9		
Dry density (pcf)	82.3	90.6	88.8		
Void ratio	1.04	0.86	0.89		
Degree of saturation,S (%)	90.9	110.9	106.2		
Preshear/After Shear Data					
Wet density (pcf)	120.9	132.1	127.2		
Water content (%)	37.2	34.0	27.7		
Dry density (pcf)	88.2	98.6	99.6		
Void ratio	0.91	0.71	0.69		
Degree of saturation,S (%)	100.0	100.0	100.0		
Results					
Nominal normal stress (ksf)	**1.00**	**2.00**	**3.99**		
Nominal shear stress (ksf) Peak	**0.87**	**1.41**	**2.71**		
Ultimate	**0.78**	**1.29**	**2.60**		
Total normal displacement (in.)	0.066	0.080	0.108		
Total shear displacement (in.)	0.256	0.261	0.276		

ABI ENGINEERING CONSULTANTS, INC.

DIRECT SHEAR TEST RESULTS

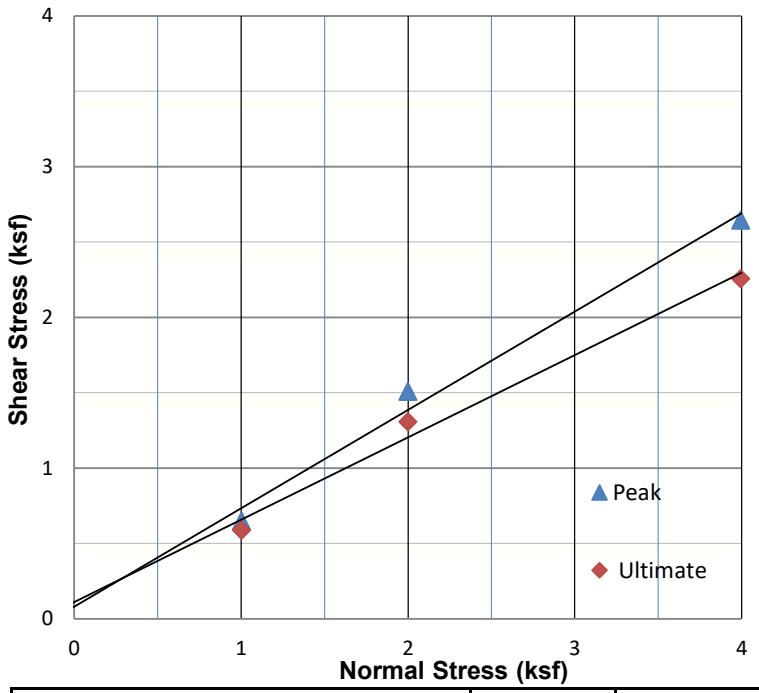
(ASTM D 3080)

Project Name: SGVWC Plant 7
Project No.: 21126
Project Location: Whittier, CA

Tested By : MM
Checked By : JW
Date : 9/14/2021

Boring No. B-2 Depth(ft): 5' Sample ID: 210824-008
Sample type: Cal -Mod
Soil description: Clay (CL)

Shape of shear box: Circular
Diameter of shear box (in): 2.416
Initial specimen thickness (in): 1.000
Rate of shearing (in/min): 0.025



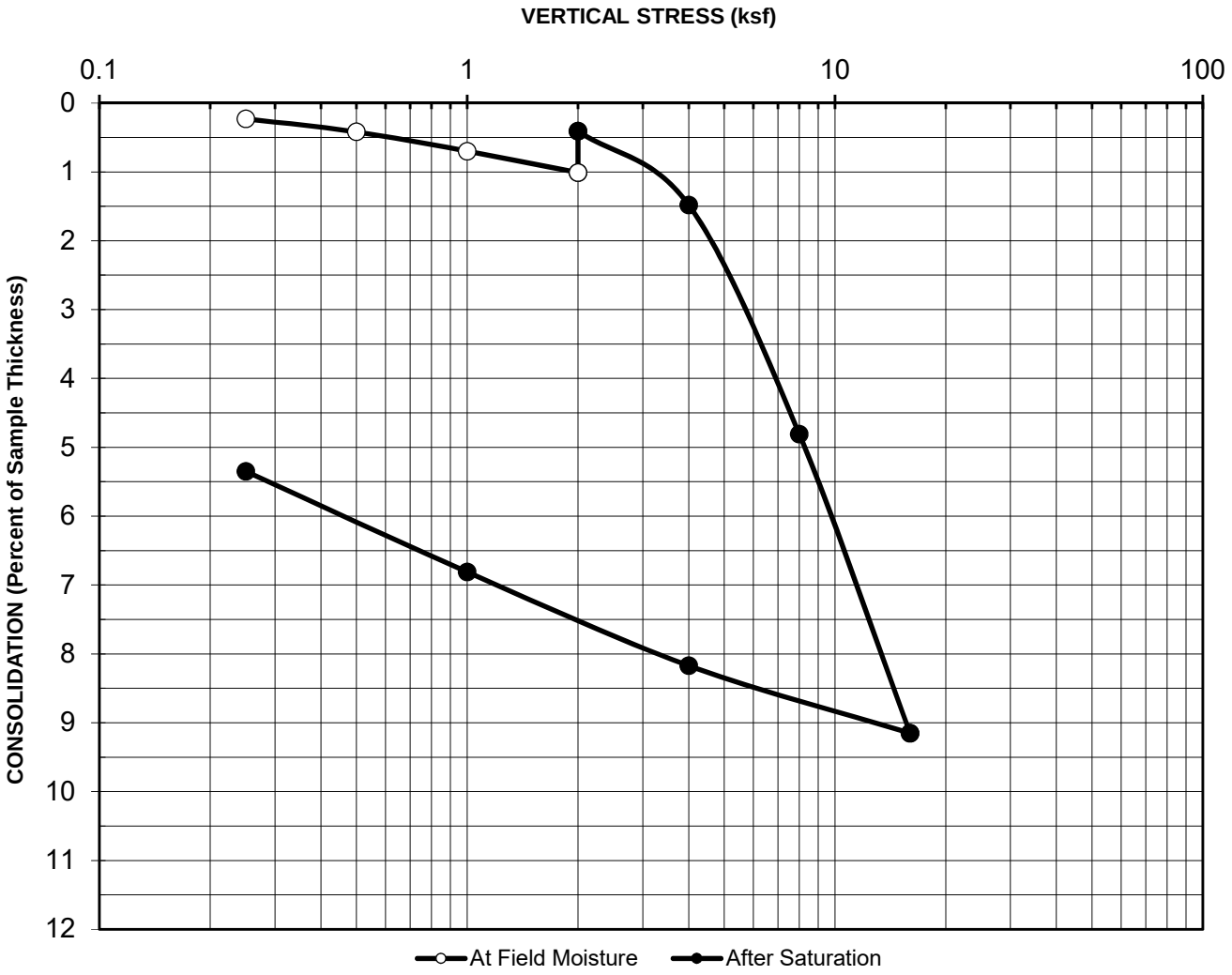
Strength Parameters

	Peak	Ultimate
Cohesion (psf)	80	112
Friction angle (degrees)	33	29

Remark

Specimen Data	Test number	1	2	3		
	Wet density (pcf)	117.3	113.2	112.3		
	Water content (%)	26.8	26.8	26.8		
	Dry mass of test specimen (g)	111.3	107.4	106.5		
	Dry density (pcf)	92.5	89.2	88.5		
	Void ratio	0.82	0.89	0.90		
	Degree of saturation,S (%)	88.5	81.8	80.4		
Preshear/After Shear Data						
	Wet density (pcf)	115.7	120.1	125.7		
	Water content (%)	23.4	27.5	24.6		
	Dry density (pcf)	93.7	94.2	100.8		
	Void ratio	0.80	0.79	0.67		
	Degree of saturation,S (%)	79.6	94.4	99.4		
Results						
	Nominal normal stress (ksf)	**1.00**	**2.00**	**3.99**		
	Nominal shear stress (ksf) Peak	**0.65**	**1.51**	**2.65**		
	Ultimate	**0.59**	**1.31**	**2.26**		
	Total normal displacement (in.)	0.013	0.053	0.122		
	Total shear displacement (in.)	0.264	0.285	0.354		

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

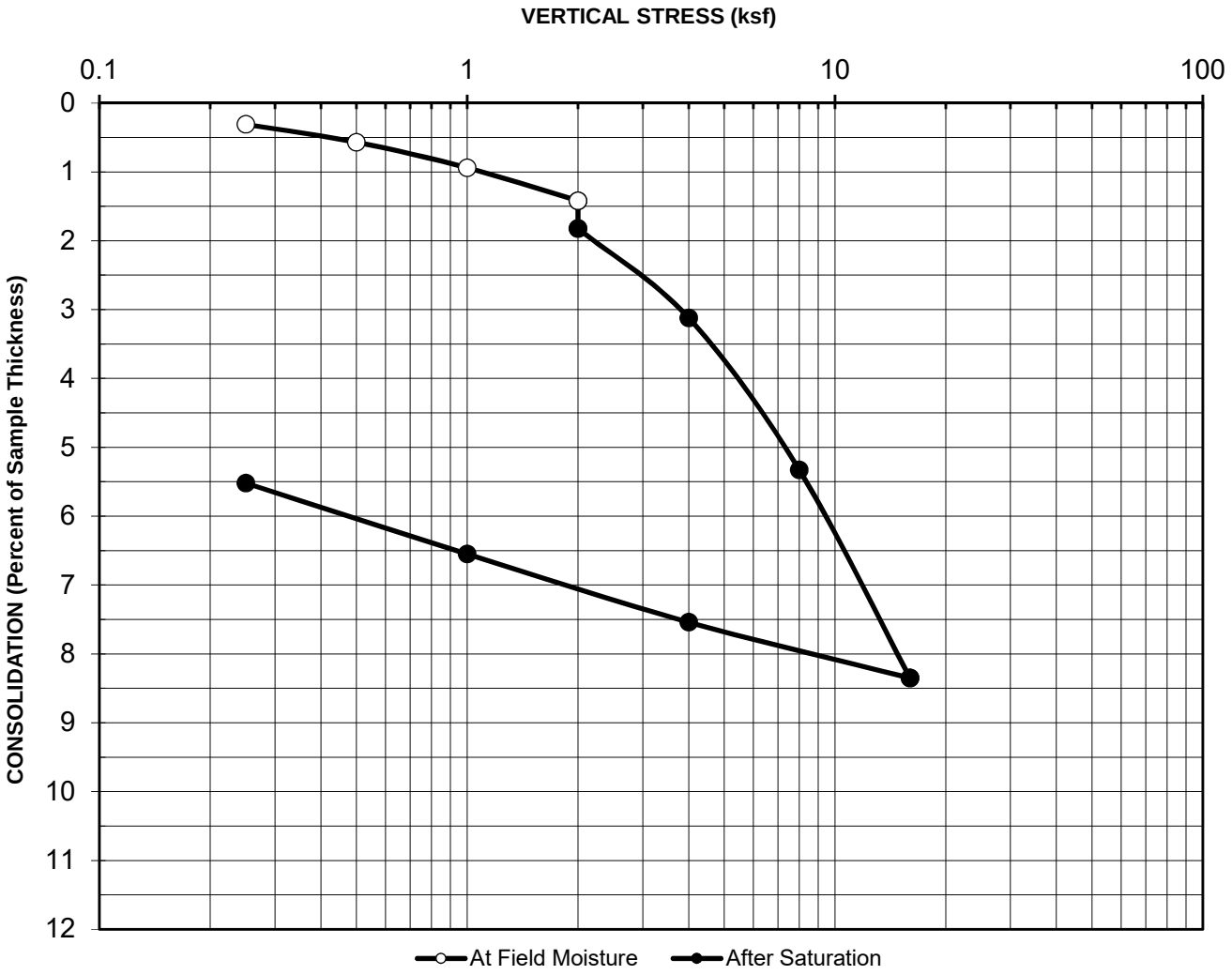


Boring No. :	B-2	Initial Dry Unit Weight (pcf):	99.7
Sample No.:	B-2@5'	Initial Moisture Content (%):	14.0
Depth (feet):	5-6.5	Final Moisture Content (%):	21.7
Sample Type:	Mod Cal	Assumed Specific Gravity:	2.7
Soil Description:	Clay	Initial Void Ratio:	0.69
Remarks:	Swell= 0.60% upon inundation		

CONSOLIDATION CURVE
ASTM D 2435

Project Name:	Plant 7		
Project No.:	21126		
Date:	9/15/2021		
AP No:	21-0928	**Sheet No:**	1

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

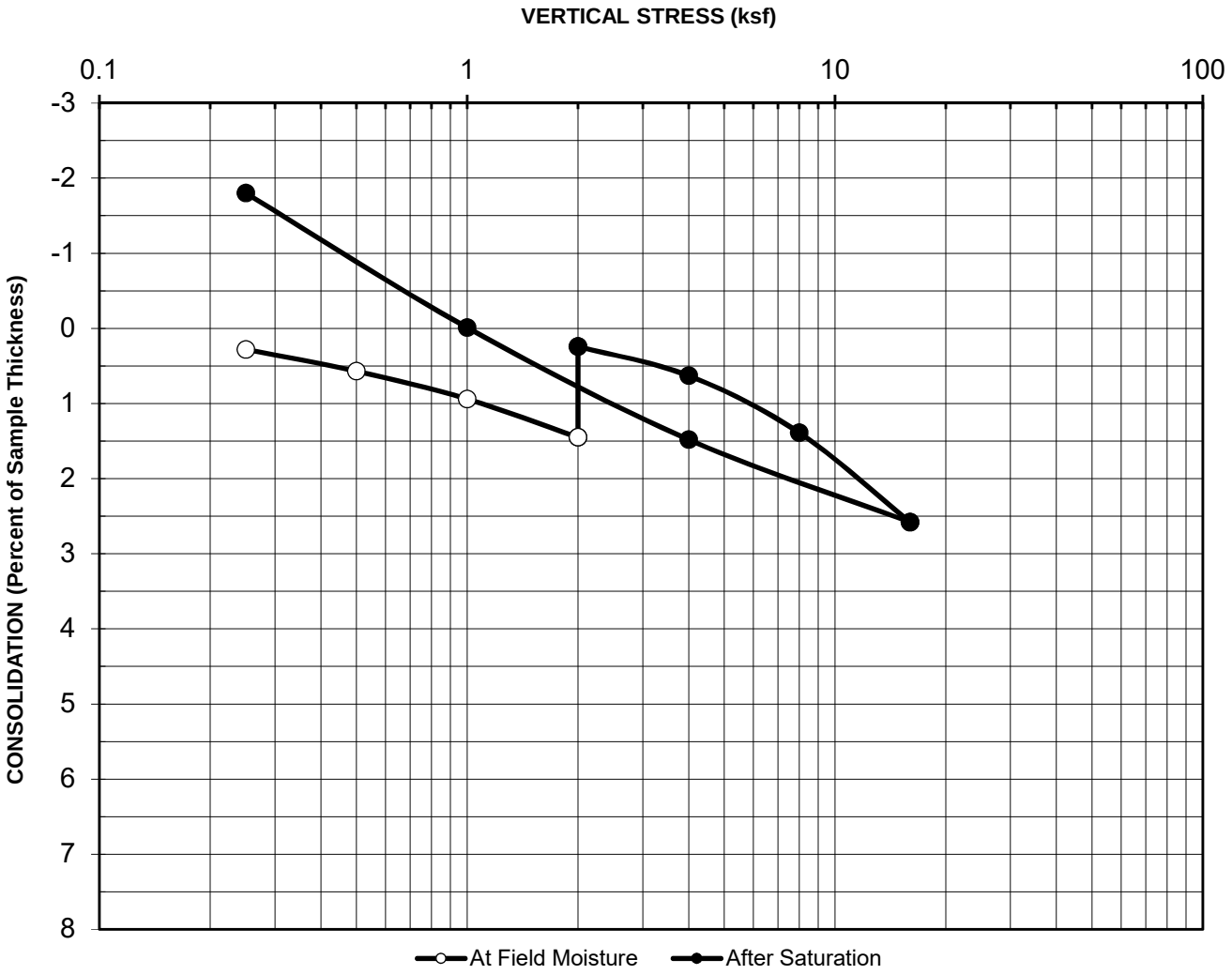


Boring No. :	B-3	Initial Dry Unit Weight (pcf):	93.8
Sample No.:	B-3@5'	Initial Moisture Content (%):	15.5
Depth (feet):	5-6.5	Final Moisture Content (%):	28.0
Sample Type:	Mod Cal	Assumed Specific Gravity:	2.7
Soil Description:	Silt	Initial Void Ratio:	0.80
Remarks:	Collapse= 0.40% upon inundation		

CONSOLIDATION CURVE
ASTM D 2435

Project Name:	Plant 7		
Project No.:	21126		
Date:	9/15/2021		
AP No:	21-0928	**Sheet No:**	1

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com



Boring No. :	B-2	Initial Dry Unit Weight (pcf):	106.5
Sample No.:	B-2@20'	Initial Moisture Content (%):	17.2
Depth (feet):	20-21.5	Final Moisture Content (%):	25.0
Sample Type:	Mod Cal	Assumed Specific Gravity:	2.7
Soil Description:	Clay	Initial Void Ratio:	0.58
Remarks:	Swell= 1.21% upon inundation		

CONSOLIDATION CURVE
ASTM D 2435

Project Name:	SGVWC Plant 7
Project No.:	21126
Date:	10/4/2021
AP No:	21-1002 **Sheet No:** 1

ANAHEIM TEST LAB, INC

196 Technology Drive, Unit D
Irvine, CA 92618
Phone (949)336-6544

ABI Engineering
1701 E. Edinger Ave.
Santa Ana, CA 92705

DATE: 09/15/2021

P.O. NO: Transmittal

LAB NO: C-5233

SPECIFICATION: CTM-643/417/422

MATERIAL: Soil

Project No.: 21126
Project: Plant 7 – SGVWC
Date Sampled: 09/08/2021
Sample ID: B-3 @ 0-5'

ANALYTICAL REPORT

CORROSION SERIES
SUMMARY OF DATA

pH	MIN. RESISTIVITY per CT. 643 ohm-cm	SOLUBLE SULFATES per CT. 417 ppm	SOLUBLE CHLORIDES per CT. 422 ppm
7.9	960	102	22

RESPECTFULLY SUBMITTED

WES BRIDGER LAB MANAGER

ANAHEIM TEST LAB, INC

196 Technology Drive, Unit D
Irvine, CA 92618
Phone (949)336-6544

TO:

ABI ENGINEERING
1701 E. EDENGER AVE., STE A9
SANTA ANA, CA 92705

DATE: 09/17/2021

P.O. NO: Transmittal

LAB NO: C-5235

SPECIFICATION: CA-301

MATERIAL: Brown, Silty Clay

Project No.: 21126
Project: Plant 7 – SGVWC
Date Sampled: 09/08/2021
Sample ID: B-1 @ 0-5' Bulk

ANALYTICAL REPORT

"R" VALUE

BY EXUDATION	BY EXPANSION
13	10

RESPECTFULLY SUBMITTED

WES BRIDGER LAB MANAGER

"R" VALUE CA 301

Client: ABI Engineering **ATL No.:** C 5235 **Date:** 9/17/2021

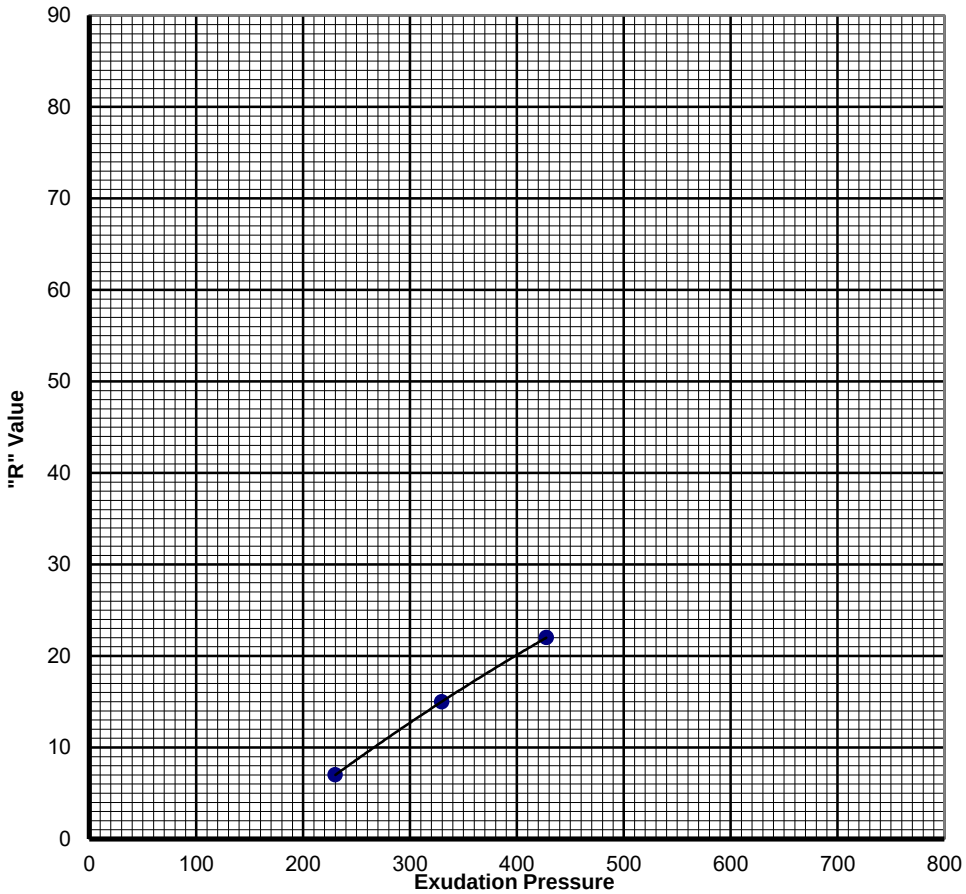
Client Reference No.: 21126

Sample: Plant 7 - SGVWC **Soil Type:** Brown, Silty Clay

.

TEST SPECIMEN		A	B	C	D
Compactor Air Pressure	psi	120	80	60	
Initial Moisture Content	%	11.6	11.6	11.6	
Moisture at Compaction	%	20.0	21.9	23.7	
Briquette Height	in.	2.48	2.48	2.54	
Dry Density	pcf	104.7	103.1	100.8	
EXUDATION PRESSURE	psi	428	330	230	
EXPANSION dial	(x .0001)	70	44	19	
Ph at 1000 pounds	psi	50	55	62	
Ph at 2000 pounds	psi	112	125	141	
Displacement	turns	3.78	3.9	4.22	
"R" Value		22	15	7	
CORRECTED "R" VALUE		22	15	7	

Final "R" Value	
BY EXUDATION: @ 300 psi	**13**
BY EXPANSION: TI = 5.0	**10**



APPENDIX C

SLOPE STABILITY ANALYSES

Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0

SGVWC Plant 7

Report created by ReSSA(3.0): Copyright (c) 2001-2010, ADAMA Engineering, Inc.

PROJECT IDENTIFICATION

Title:	SGVWC Plant 7
Project Number:	21126 -
Client:	Michael Galvan
Designer:	MM
Station Number:	Section A-A'

Description:
Section A-A' - Static Analysis (Proposed Conditions)

Company's information:

Name:	ABI Engineering Consultants, Inc.
Street:	1701 E. Edinger Ave Ste A9 Santa Ana, CA 92705
Telephone #:	888-220-5596
Fax #:	714-866-4171
E-Mail:	abi@abiconsultants.com

Original file path and name: P:\2021\21 ..... ility Analysis - Section A-A' (cut conditions).MSE
Original date and time of creating this file: Mon Sep 27 10:04:32 2021

PROGRAM MODE: Analysis of a General Slope using NO reinforcement material.

Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0

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INPUT DATA (EXCLUDING REINFORCEMENT LAYOUT)

SOIL DATA

=========== Soil Layer #: ===========	Unit weight, γ [lb/ft ³]	Internal angle of friction, ϕ [deg.]	Cohesion, c [lb/ft ²]
....1......Colluvial/Residual Soil	120.0	33.0	80.0
....2......Fernando Formation	120.0	32.0	216.0

REINFORCEMENT

Analysis of slope WITHOUT reinforcement.

WATER

Water is not present

SEISMICITY

Not Applicable

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Version 3.0 ReSSA Version 3.0

DRAWING OF SPECIFIED GEOMETRY - COMPLEX - Quick Input

-- Problem geometry is defined along sections selected by user at x,y coordinates.
-- X1,Y1 represents the coordinates of soil surface. X2,Y2 represent the coordinates of the end of soil layer 1 and start of soil layer 2, and so on.

GEOMETRY

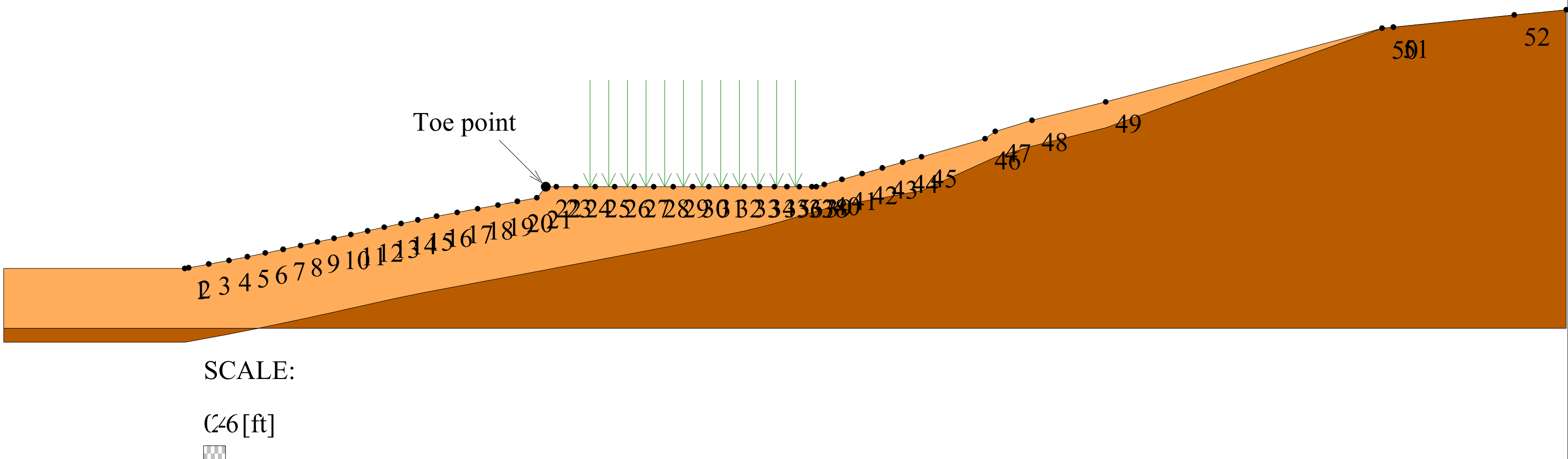
Soil profile contains 2 layers

UNIFORM SURCHARGE

Load Q1 = 2646.00 [lb/ft²] inclined from verical at 0.00 degrees, starts at X1s = 110.00 and ends at X1e = 170.00 [ft].
Surcharge load, Q2.................................... None
Surcharge load, Q3.................................... None

STRIP LOAD

............................None...................................



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RESULTS OF ROTATIONAL STABILITY ANALYSIS

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.) The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

Critical circles for each entry point (considering all specified exit points)

Entry Point #	Entry Point (X, Y) [ft]		Exit Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	190.40	607.38	3.48	580.79	54.21	894.48	317.76	3.77	
2	217.15	614.98	3.48	580.94	75.89	814.12	244.16	4.30	
3	243.90	623.48	167.40	602.04	177.52	713.13	111.55	3.35	
4	270.65	630.51	167.67	602.00	171.08	789.96	187.99	3.26	
5	297.40	637.64	166.59	602.15	189.31	777.22	176.54	3.17	
6	324.15	644.77	166.59	602.20	198.61	796.52	196.95	3.09	OK
7	350.90	647.59	166.59	602.15	199.91	863.52	263.48	3.09	
8	377.65	650.00	166.59	602.15	206.37	916.11	316.47	3.24	
9	404.40	650.00	166.59	602.15	214.24	980.22	381.06	3.51	
10	431.15	650.00	166.59	602.15	222.56	1047.99	449.34	3.86	
11	457.90	650.00	166.59	602.15	231.28	1118.99	520.88	4.25	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-entry' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

****

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.) The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

Critical circles for each exit point (considering all specified entry points)

Exit Point #	Exit Point (X, Y) [ft]		Entry Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	3.48	580.79	190.40	607.38	54.21	894.48	317.76	3.77	
2	20.32	583.89	190.40	607.38	71.20	842.92	263.98	3.91	
3	37.02	587.29	190.40	607.39	86.84	802.44	220.85	4.17	
4	53.15	590.89	377.65	650.00	120.86	1139.50	552.77	4.42	
5	69.82	594.26	404.40	650.00	69.82	1626.31	1032.05	4.63	
6	86.15	597.21	404.40	650.00	86.15	1582.99	985.77	4.77	
7	102.48	602.00	324.15	644.77	200.93	687.58	130.45	9.19	
8	117.21	602.11	404.40	650.00	161.95	1218.93	618.44	4.82	
9	133.79	602.12	377.65	650.00	173.76	1043.48	443.16	4.28	
10	151.26	602.02	377.65	650.00	185.97	996.33	395.84	3.74	
11	166.59	602.20	324.15	644.77	198.61	796.52	196.95	3.09	On extreme X-exit

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-exit' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

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CRITICAL RESULTS OF ROTATIONAL AND TRANSLATIONAL STABILITY ANALYSES

Rotational (Circular Arc; Bishop) Stability Analysis

Minimum Factor of Safety = 3.09

Critical Circle: Xc = 198.61[ft], Yc = 796.52[ft], R = 196.95[ft]. (Number of slices used = 60)

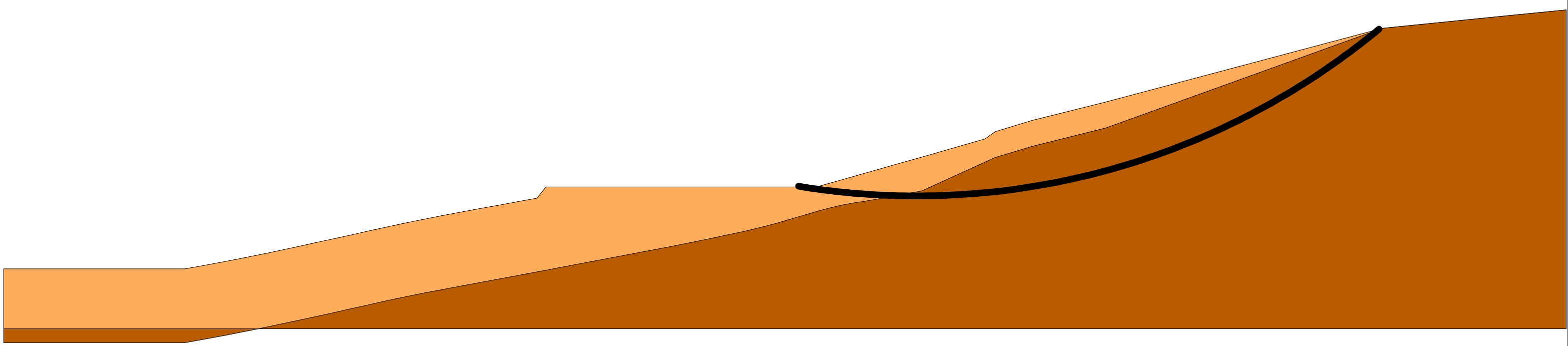
Translational (2-Part Wedge; Spencer), Direct Sliding, Stability Analysis

N O T   C O N D U C T E D

Three-Part Wedge Stability Analysis

N O T   C O N D U C T E D

REINFORCEMENT LAYOUT: DRAWING



SCALE:

(26[ft]

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SGVWC Plant 7

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PROJECT IDENTIFICATION

Title:	SGVWC Plant 7
Project Number:	21126 -
Client:	Michael Galvan
Designer:	MM
Station Number:	Section A-A'

Description:
Section A-A' - Seismic Analysis (Proposed Conditions)

Company's information:

Name:	ABI Engineering Consultants, Inc.
Street:	1701 E. Edinger Ave Ste A9 Santa Ana, CA 92705
Telephone #:	888-220-5596
Fax #:	714-866-4171
E-Mail:	abi@abiconsultants.com

Original file path and name: P:\2021\21 ..... ility Analysis - Section A-A' (cut conditions).MSE
Original date and time of creating this file: Mon Sep 27 10:04:32 2021

PROGRAM MODE: Analysis of a General Slope using NO reinforcement material.

Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0 ReSSA Version 3.0

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Version 3.0 ReSSA Version 3.0

INPUT DATA (EXCLUDING REINFORCEMENT LAYOUT)

SOIL DATA

=========== Soil Layer #: ===========	Unit weight, γ [lb/ft ³]	Internal angle of friction, ϕ [deg.]	Cohesion, c [lb/ft ²]
....1......Colluvial/Residual Soil	120.0	33.0	80.0
....2......Fernando Formation	120.0	32.0	216.0

REINFORCEMENT

Analysis of slope WITHOUT reinforcement.

WATER

Water is not present

SEISMICITY

Horizontal peak ground acceleration coefficient, Ao = 0.485
Design horizontal seismic coefficient, kh = Am = 0.5 x Ao = 0.242 & design vertical seismic coefficient, kv (down) = 0.000 x kh = 0.000

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DRAWING OF SPECIFIED GEOMETRY - COMPLEX - Quick Input

-- Problem geometry is defined along sections selected by user at x,y coordinates.
-- X1,Y1 represents the coordinates of soil surface. X2,Y2 represent the coordinates of the end of soil layer 1 and start of soil layer 2, and so on.

GEOMETRY

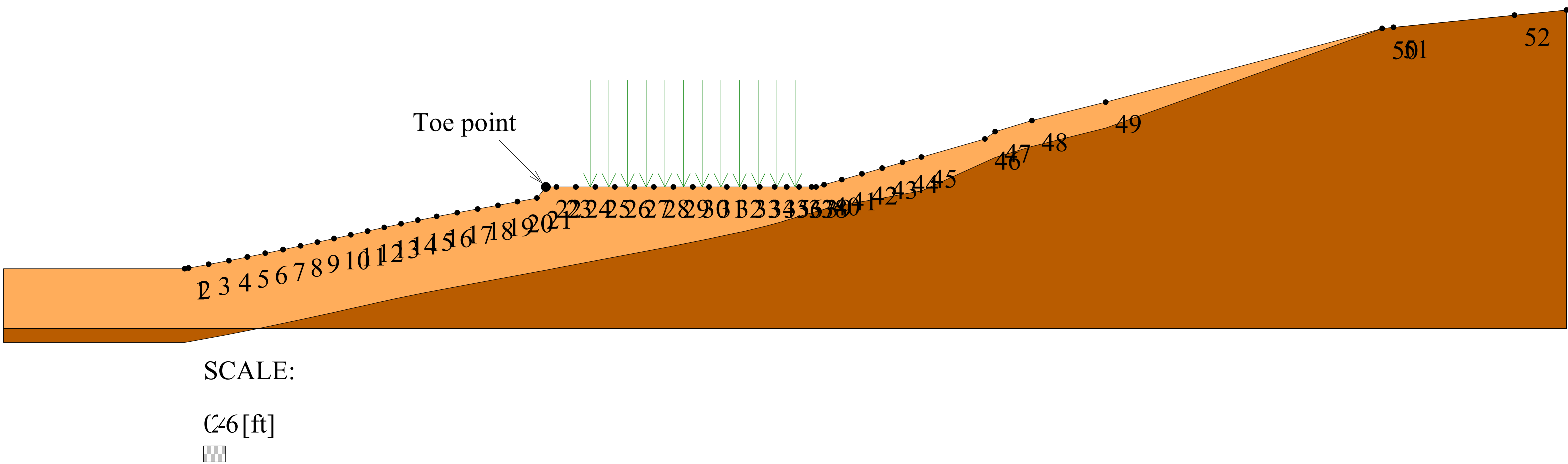
Soil profile contains 2 layers

UNIFORM SURCHARGE

Load Q1 = 2646.00 [lb/ft²] inclined from verical at 0.00 degrees, starts at X1s = 110.00 and ends at X1e = 170.00 [ft].
Surcharge load, Q2.................................... None
Surcharge load, Q3.................................... None

STRIP LOAD

............................None...................................



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RESULTS OF ROTATIONAL STABILITY ANALYSIS

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)
The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

Critical circles for each entry point (considering all specified exit points)

Entry Point #	Entry Point (X, Y) [ft]		Exit Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	190.40	607.39	3.48	581.00	72.49	767.44	198.79	1.96	
2	217.15	614.98	3.48	580.96	77.37	804.91	235.83	2.06	
3	243.90	623.48	167.40	602.04	177.52	713.13	111.55	1.76	
4	270.65	630.51	167.68	602.02	186.43	734.57	133.88	1.69	
5	297.40	637.64	166.59	602.17	191.37	769.74	169.39	1.62	
6	324.15	644.77	166.59	602.20	198.61	796.52	196.95	1.57	
. 7	350.90	647.59	166.59	602.15	199.91	863.52	263.48	1.54 .	OK
8	377.65	650.00	166.59	602.15	206.37	916.11	316.47	1.55	
9	404.40	650.00	166.59	602.13	209.83	1001.93	402.13	1.59	
10	431.15	650.00	166.59	602.13	217.56	1075.43	476.04	1.65	
11	457.90	650.00	166.59	602.13	225.69	1152.78	553.81	1.71	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-entry' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

****

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)
The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

Critical circles for each exit point (considering all specified entry points)

Exit Point #	Exit Point (X, Y) [ft]		Entry Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	3.48	580.83	404.40	650.00	113.34	1140.55	570.40	1.80	
2	20.32	583.89	431.15	650.00	135.85	1175.51	602.80	1.83	
3	37.16	587.26	457.90	650.00	37.16	2029.34	1442.08	1.98	
4	53.15	590.93	431.15	650.00	168.76	1090.12	512.40	1.90	
5	69.82	594.26	457.90	650.00	69.82	1973.12	1378.86	2.09	
6	86.15	597.21	457.90	650.00	86.15	1932.65	1335.43	2.15	
7	102.48	602.00	324.15	644.77	200.93	687.58	130.45	3.18	
8	117.21	602.37	431.15	650.00	214.78	1017.71	426.64	2.04	
9	133.79	602.26	431.15	650.00	217.95	1028.03	434.01	1.92	
10	151.26	602.03	404.40	650.00	211.07	978.32	381.01	1.76	
11	166.59	602.15	350.90	647.59	199.91	863.52	263.48	1.54 .	On extreme X-exit

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-exit' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

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CRITICAL RESULTS OF ROTATIONAL AND TRANSLATIONAL STABILITY ANALYSES

Rotational (Circular Arc; Bishop) Stability Analysis

Minimum Factor of Safety = 1.54

Critical Circle: Xc = 199.91[ft], Yc = 863.52[ft], R = 263.48[ft]. (Number of slices used = 59)

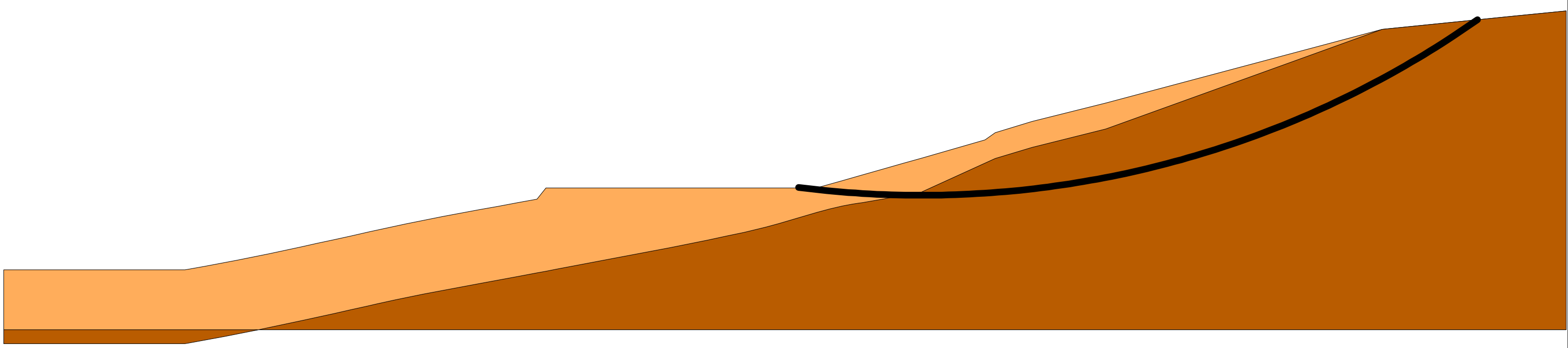
Translational (2-Part Wedge; Spencer), Direct Sliding, Stability Analysis

N O T C O N D U C T E D

Three-Part Wedge Stability Analysis

N O T C O N D U C T E D

REINFORCEMENT LAYOUT: DRAWING



SCALE:

0246[ft]

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