

Initial Study and Mitigated Negative Declaration

# Las Virgenes Municipal Water District

Twin Lakes Water Storage Tank  
and Pump Station Upgrades



PREPARED FOR:

## Las Virgenes Municipal Water District

4232 Las Virgenes Road  
Calabasas, California 91302

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**(818) 879-4700**

November 2020

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**LAS VIRGENES MUNICIPAL WATER DISTRICT  
TWIN LAKES WATER STORAGE TANK AND  
PUMP STATION UPGRADES**

**INITIAL STUDY AND  
MITIGATED NEGATIVE DECLARATION**

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## 1.0 INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) was prepared pursuant to the applicable provisions of the California Environmental Quality Act (CEQA) statute and implementing guidelines, known as the CEQA Guidelines. The Las Virgenes Municipal Water District (LVMWD or “District”) is the lead agency for the proposed Project. This IS/MND examines potential physical impacts to the environment as a result of implementation of the proposed Twin Lakes Water Tank and Pump Station Upgrades (Project) to provide adequate water storage and pressure to serve the Deerlake residential development (Tract No. 53138) currently under construction. The purpose of this IS/MND is to inform the District’s Board of Directors (decision makers for the Project), the public, neighboring jurisdictions, including the County of Los Angeles, the City of Los Angeles, and other responsible agencies of the proposed Project’s environmental effects that may be significant and adverse, as well as describe regulations or mitigations to lessen or eliminate such impacts.

### 1.1 BACKGROUND

The Deerlake Ranch residential development (Amended Vesting Tentative Tract No. 53138) is currently under construction on approximately 232.87 acres in the hills northeast of the Topanga Canyon Boulevard interchange with State Route 118 (SR-118 Freeway) in Los Angeles County, California. The development will include 314 single-family residential lots, one recreation building, one sheriff facility, and 31 open space/slope lots. Potable water will be delivered to Deerlake Ranch by the Las Virgenes Municipal Water District (District). Deerlake Ranch is situated within the District’s Twin Lakes pressure zone. Water supply enters the pressure zone through the LV-3 turnout, which is an 8-inch connection to Metropolitan Water District of Southern California’s West Valley Feeder No. 2. The Twin Lakes Pump Station adds approximately 530 feet of head to reach the Twin Lakes system hydraulic grade line of 1,585 feet.<sup>1</sup> A Water System Design Report (WSDR)<sup>2</sup> was prepared to investigate the feasibility of providing potable water service for the future residences and associated uses, and to develop criteria for the facilities required to provide adequate service. The WSDR concluded that Phase I of the Deerlake Ranch development does not require any additional potable water pumping or storage capacity. However, to provide the capacity need in Phase 2 and Phase 3, additional pumping capacity of the Twin Lakes Pump Station (Pump Station) is required, as well as additional storage capacity.

### 1.2 AUTHORITY TO PREPARE A NEGATIVE DECLARATION

The District is the lead agency for the review and approval of the proposed Project. Based on the findings of the Initial Study, the lead agency determined an MND is the appropriate environmental document for the Project, pursuant to CEQA. As provided for by CEQA §21064.5, an MND may be prepared for a project subject to CEQA “when the Initial Study has identified potentially significant effects on the environment but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and (2) there is no substantial evidence in

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<sup>1</sup> Kennedy/Jenks Consultants, Deerlake Ranch Storage and Pumping Capacity Study, July 25, 2016.

<sup>2</sup> AECOM Technical Services, Inc., Water System Design Report for Amended Vesting Tentative Tract No. 53138 Deerlake Ranch, August 31, 2017.

light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment.”

This ~~Draft~~ MND has been prepared in conformance with Section 15070 of the State of California CEQA Guidelines. The purpose of the MND and the Initial Study Checklist is to determine any potentially significant impacts associated with the proposed Project and incorporate mitigation measures into the Project design as necessary to reduce or eliminate the significant or potentially significant effects of the Project.

### **1.3 OTHER AGENCIES THAT MAY USE THE MITIGATED NEGATIVE DECLARATION**

This MND is intended to be used by other agencies that may have an interest in reviewing the Project including, but not limited to, the County of Los Angeles, and the City of Los Angeles.

### **1.4 PUBLIC REVIEW PROCESS**

In accordance with CEQA, a good faith effort at full disclosure has been made during the preparation of this MND to contact affected agencies, organizations and persons who may have an interest in this Project.

In reviewing the MND, affected public agencies and the interested public should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment. A copy of the ~~draft~~ MND and related documents are available for review at LVMWD headquarters located at 4232 Las Virgenes Road in Calabasas during regular business hours.

Comments may be made on the MND in writing before the end of the public review period. A 30-day review and comment period from September 10<sup>th</sup>, 2020 to October 10<sup>th</sup>, 2020 has been established in accordance with Sections 15072(a) of the CEQA Guidelines. Following the close of the public comment period, the lead agency will consider this MND and comments thereto in determining whether to approve the proposed Project.

Written comments on the MND should be sent to the following address by 5:00 p.m., Monday, October 12<sup>th</sup>, 2020 to:

Las Virgenes Municipal Water District  
4232 Las Virgenes Road  
Calabasas, CA 91302  
Contact: Mercedes Acevedo E.I.T  
Telephone: (818) 251-2147

## 2.0 PROJECT DESCRIPTION

### 2.1 PROJECT LOCATION

The District proposes to replace an existing 400,000-gallon water tank at the Twin Lakes water tank site north of the 118-freeway with a new 1,000,000-gallon water tank, for a net increase of 600,000 gallons in holding capacity. The new water tank would be located adjacent to an existing 1,600,000-gallon water tank that would remain in place at the Twin Lakes water tank site. Additionally, the proposed Project would provide three (3) additional pumps and a standby diesel-powered generator at the Twin Lakes Pump Station in Chatsworth (next to Chatsworth Park). The additional water storage and pumping capacity is proposed to provide adequate supplies and pressure to serve the Deerlake Ranch residential development (Tract 53138) currently under construction.

The Twin Lakes water tank site is located approximately 500 feet north of the SR-118 freeway, and approximately 0.5 mile west of the Topanga Canyon Road (SR-27) / SR-118 freeway interchange, in an unincorporated portion of Los Angeles County, northwest of the San Fernando Valley. The two existing water tanks are located on an approximately 0.9-acre property that includes Assessor's Parcel Number (APN) 2821-026-900, and a portion of APN 2821-026-003. The water tank site is located on a ridgeline, which the County has not designated as significant,<sup>3</sup> and is situated at an elevation approximately 245 feet higher than the nearest travel lanes of the SR-118 freeway. An existing dirt road provides access to the water tank site from Iverson Road, within the adjacent gated community.

The Twin Lakes Pump Station is located approximately 4,600 feet south of the SR-118 Freeway, within the City of Los Angeles boundary, in the northwest portion of the San Fernando Valley, approximately 0.4 miles northwest of the western terminus of Devonshire Street. The Pump Station is a rectangular fenced area of approximately 0.25 acres that comprises APN 2723-010-900, which is located within the northern undeveloped portion of Chatsworth Park South, and is approximately 130 feet south of the Union Pacific Railroad tracks.

The Tract 53138 Deerlake Ranch residential development that the proposed water tank and pump station upgrades would serve is currently under construction, and is generally located northeast of the Topanga Canyon Road (SR-27) / SR-118 freeway interchange, in an unincorporated portion of Los Angeles County. The Project site locations are shown in **Figure 2-1, Water Tank and Pump Station Locations**.

### 2.2 ENVIRONMENTAL SETTING

The Twin Lakes water tank site is currently occupied by an existing 400,000-gallon and a 1,600,000-gallon water tank, surrounded by a paved apron. Adjacent lands consist of open space, with nearby uses consisting of the SR-118 freeway to the south, single-family residences to the west and north, and multi-family residences to the east. The existing conditions of the water tank site are shown in **Figure 2-2, Existing Conditions – Water Tank Site**. The existing 400,000-gallon water tank is approximately 52 feet in diameter and has a sidewall height of 26

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<sup>3</sup> Los Angeles County Department of Regional Planning, GIS-NET Public, Accessed on April 8, 2020, at: [http://rpgis.isd.lacounty.gov/Html5Viewer/index.html?viewer=GISNET\\_Public.GIS-NET\\_Public](http://rpgis.isd.lacounty.gov/Html5Viewer/index.html?viewer=GISNET_Public.GIS-NET_Public)

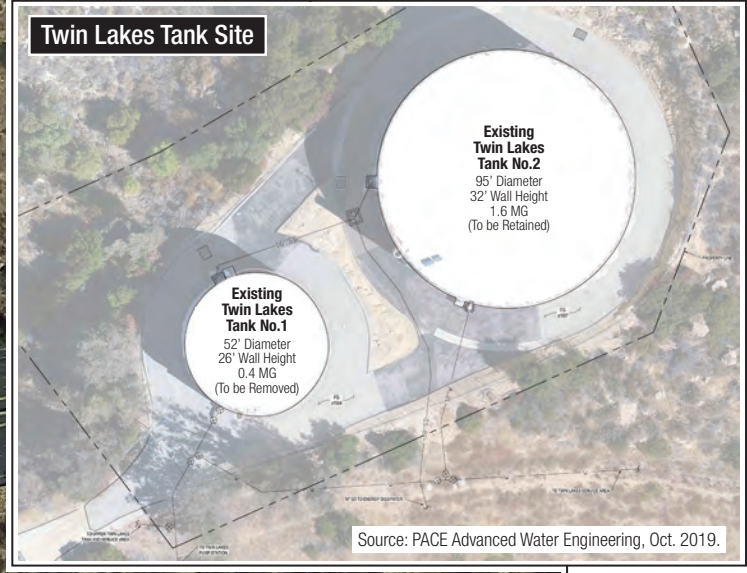


Aerial Source: GoogleEarth Pro, Dec. 31, 2018.





Aerial Source: GoogleEarth Pro, Dec. 31, 2018.



feet, and the existing 1,600,000-gallon water tank has a diameter of approximately 95 feet with a sidewall height of 32 feet. Due to a difference of about 6 feet in pad elevations, the top of the smaller tank is at approximately the same elevation as the top of the larger tank.

The existing Pump Station is a rectangular fenced area of approximately 0.25 acres that is predominantly paved and developed with six water pumps and associated equipment installed on a paved surface that covers the majority of the site, as well as a central structure where various motor controls and electrical equipment for the pumps are located. Wall-mounted security lights are located on the central structure. Aerial imagery of the existing Pump Station in its current configuration is provided in **Figure 2-3, Existing Conditions – Pump Station Site**. The site has been graded flat with development of the existing infrastructure, and a short retaining wall is located within the site to the west of the existing equipment. The Pump Station conveys water to the Twin Lakes area north of the SR-118 Freeway via an existing underground pipeline. As seen in Figure 2-3, existing land uses immediately adjacent to the Twin Lakes Pump Station consist of dirt roads and undeveloped open space within Chatsworth Park South. The existing topography surrounding the site primarily consists of steep slopes rising to higher elevations than the Pump Station. Beyond the adjacent hills, developed recreational fields and playground portion of the park is located approximately 0.1 mile to the south of the Pump Station. Nearby uses consist of the railroad tracks to the north, and residential uses to the southeast, the nearest of which is approximately 0.23 miles from the Pump Station. Beyond the railroad tracks to the north is open space of the Santa Susana Pass State Historic Park. The topography surrounding the Pump Station consists of rocky hills that block views of the site from developed portions of the park, residences, or public roadways. The adjacent railroad is located atop a slope approximately 80 feet above the elevation of the Pump Station.

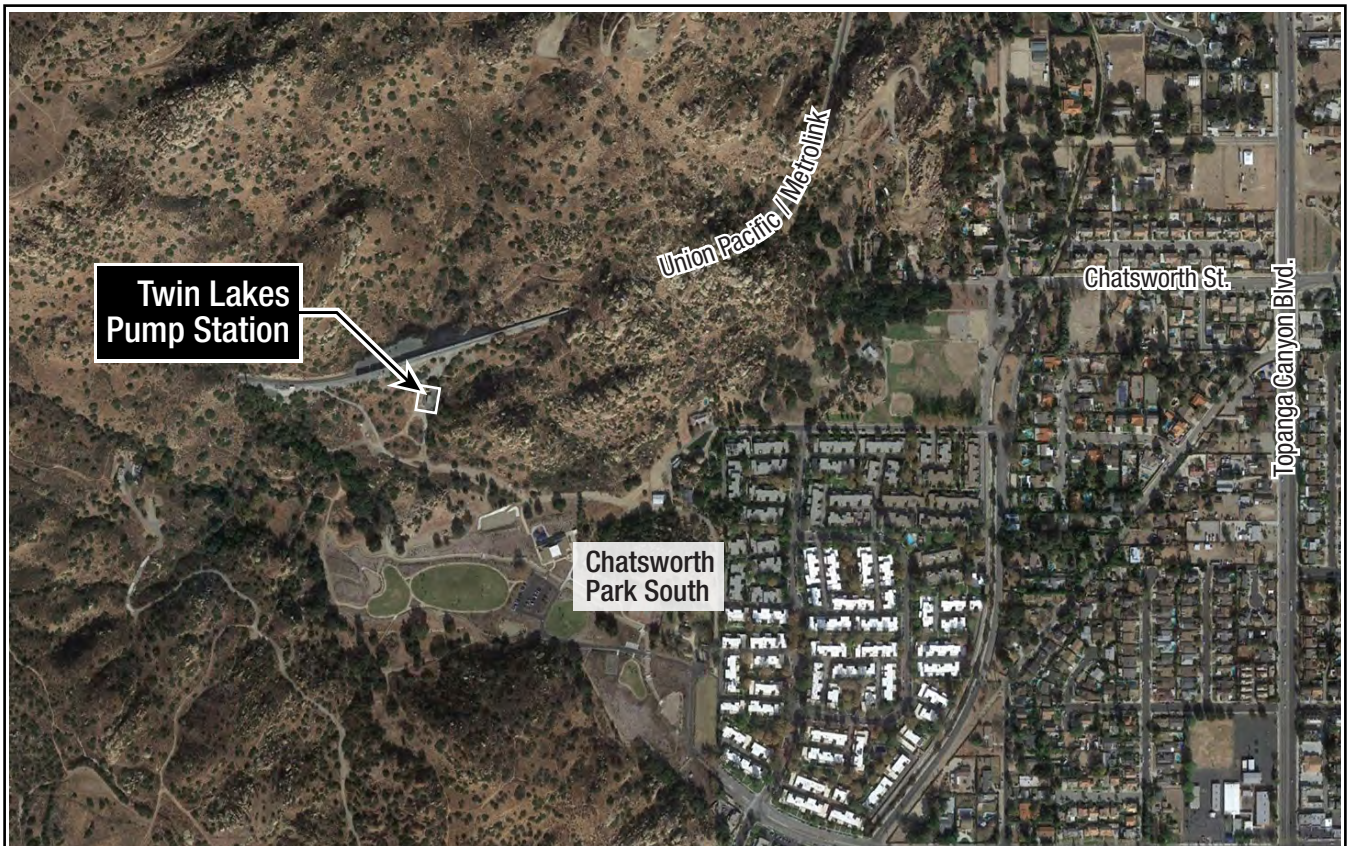
## 2.3 PROJECT CHARACTERISTICS

### *Proposed Water Tank*

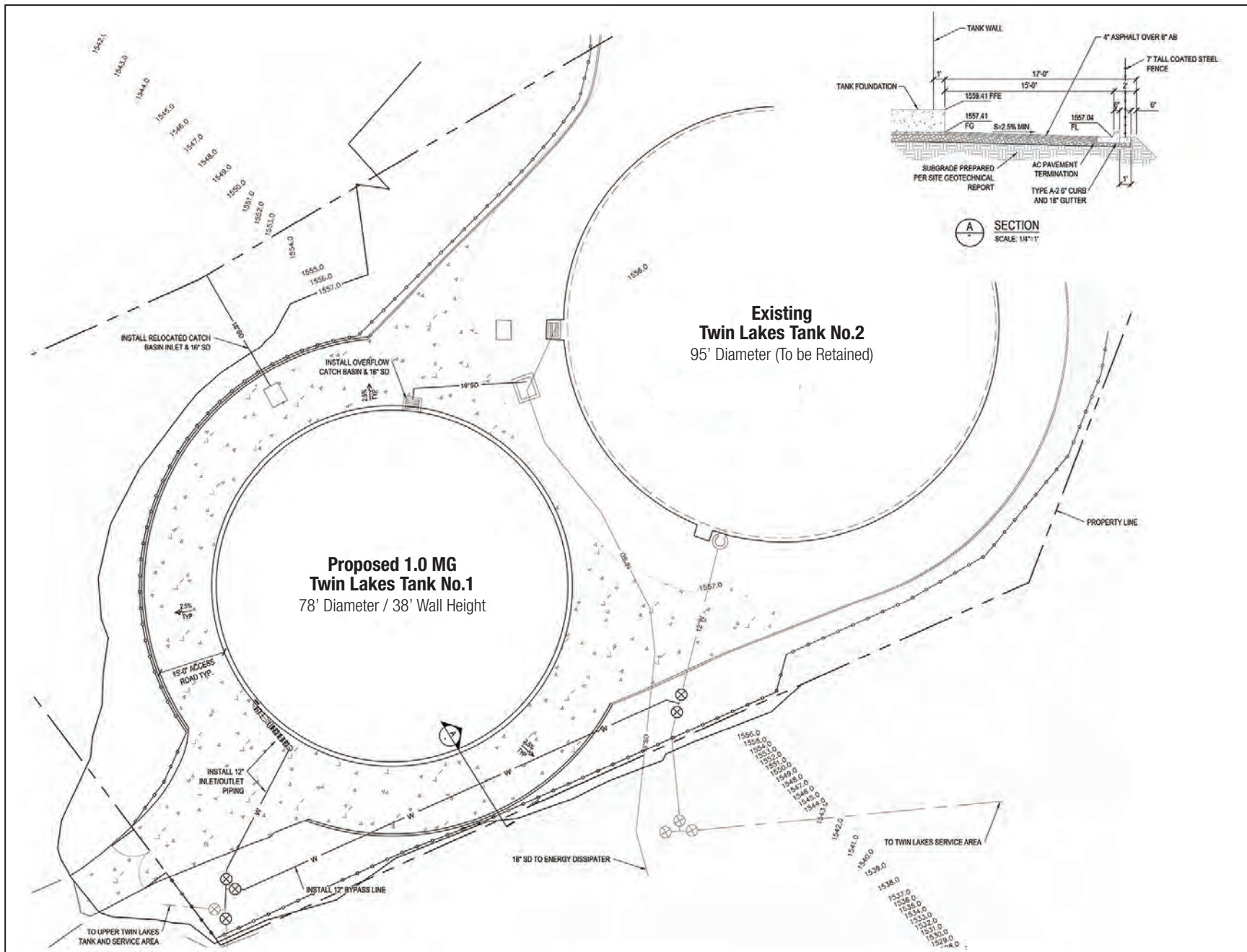
**Figure 2-4, Site Plan – Water Tank**, shows the proposed configuration of the water tank site with the replacement tank in relation to the existing larger water tank that would remain on the site. All construction vehicles including material transport and worker vehicles would access the water tank site from Iverson Road, within the adjacent gated community. The existing 400,000-gallon water tank would be disassembled and removed from the site, and the proposed 1,000,000-gallon water tank would be constructed in its place. A paved driveway of approximately 15 feet in width would surround the proposed water tank. Prior to construction of the new tank, the building pad would be graded down approximately 6 feet from the existing elevation to approximately match the finished floor elevation of the existing 1,600,000-gallon water tank that would be retained. As grading activities would primarily occur within the existing water tank site, which currently is developed with a water tank and surrounding pavement and includes a barren/sparsely vegetated rocky slope between existing water tanks (see Vegetation Map in Appendix B.1 Figure 2), project grading of vegetated areas would be limited to approximately 0.03 acres total beyond the existing paved area along the north and south sides of the water tank site. Grading activities would require export of approximately 3,000 cubic yards of soil/rock material, which would be hauled approximately fifty miles to a disposal site in Irwindale, California. To provide a 15-foot wide access drive around the perimeter of the new tank, the graded area and perimeter fence would extend slightly beyond the existing graded area and fenceline. During construction, a staging area for storing equipment and materials would be established along the dirt access road as



**Photo A** – Existing conditions image of the Twin Lakes Pump Station as currently developed. Aerial Imagery: GoogleEarth Pro, Dec. 31, 2017.



**Photo B** – Existing conditions in the vicinity of Twin Lakes Pump Station. Aerial Imagery: GoogleEarth Pro, Dec. 31, 2017.



Source: PACE Advanced Water Engineering, Oct. 2019.

# Site Plan – Water Tank



shown in Figure 2-2, which is approximately the same area where similar staging occurred for construction of the existing 1,600,000-gallon tank being retained on the site. Following construction activities, all equipment and construction materials would be removed, and the temporary staging area will be hydroseeded with a mix of native species to hasten revegetation and recovery of temporary vegetation disturbance. The proposed water tank would be constructed as a welded steel cylinder to be assembled onsite, with a diameter of 78 feet and a side wall height of 38 feet. The new tank dimensions would be approximately 26 feet wider than the existing tank to be removed. With the proposed grading that would reduce the building pad elevation approximately 6 feet, the top of the proposed water tank would be approximately 6 feet higher than the existing tank. The new tank would be painted a similar neutral color as the existing tank to be removed and the existing tank to be retained.

During operations, the tank would receive LVMWD water supplies via connection to LVMWD's existing Twin Lakes Pump Station as does the existing water tank to be replaced. The proposed water tank has been designed and sized to provide adequate additional capacity to meet the needs of the Deerlake Ranch residential development currently under construction. The Deerlake Ranch residential development will not require the additional capacity during early phases of the tract development, and therefore, construction of the tank may not occur until after completion and occupancy of Phase I or Phase II.






### ***Proposed Pump Station Upgrades***

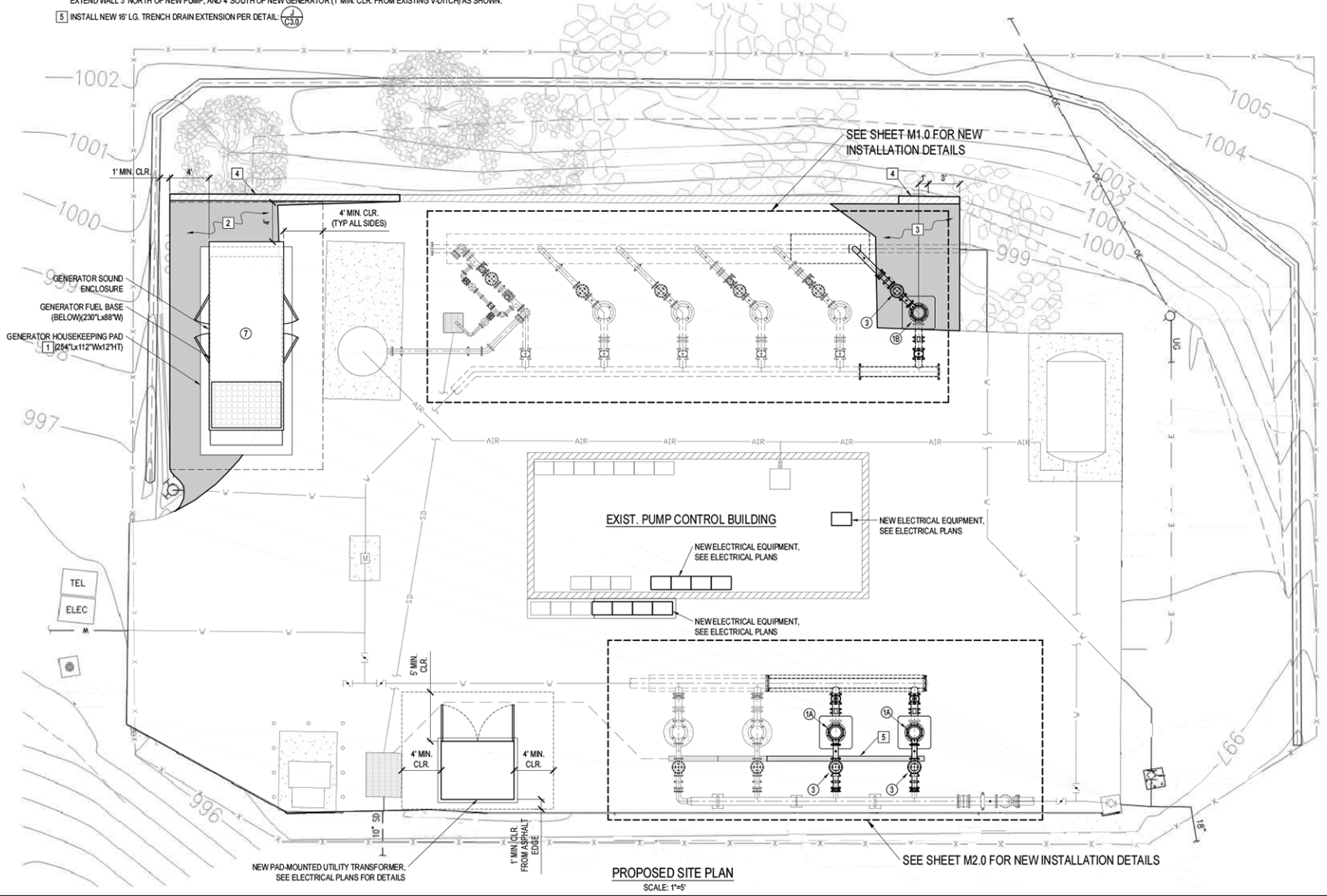
The existing Twin Lakes Pump Station site is relatively level, having been previously graded with construction and installation of existing equipment on the site. The proposed upgrades would consist of providing additional potable water pumping capacity, including one new 75-horsepower pump and two new 100-horsepower pumps (for a total of nine pumps onsite), associated pipes and fittings, and electrical components and controls. A 500 kW standby generator would also be installed to maintain adequate pressure during a power outage. The diesel-powered generator would be mounted on a concrete pad within an enclosure for noise attenuation. In addition to operating during a power outage, the generator would be programmed to run approximately 30 minutes each week for maintenance purposes. In addition to the proposed mechanical equipment, the Project would construct extensions of an existing 18-inch high retaining wall within the site, and expand the existing paving area a total of approximately 400 square feet, so that paved surfaces would extend at least four feet from the standby generator perimeter, and at least three feet from new pumps. The additional paving would increase the paved area of the site by approximately seven percent over the existing conditions. These features are shown in **Figure 2-5, Site Plan – Twin Lakes Pump Station Upgrades**.

## **2.4 DISCRETIONARY ACTIONS**

As lead agency, the District has assumed responsibility for preparing this document in accordance with the substantive and procedural requirements of CEQA. The decision to approve the Project is within the purview of the District. The purpose of this IS/MND is to disclose potential physical impacts to the environment associated with the Project to be considered in determining whether to approve the Project. The Draft MND ~~will be~~ was made available for review to the public and public agencies for 30 days to provide comments on the "sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects

**CONSTRUCTION NOTES:**

- 1 INSTALL 500KW STANDBY GENERATOR OVER CONCRETE EQUIPMENT PAD PER DETAIL: 
- 2 CLEAR AND GRUB EXISTING LANDSCAPING AND PREP FOR NEW ASPHALT INSTALLATION PER DETAIL: . EXTEND ASPHALT 4' SOUTH OF NEW GENERATOR (1' MIN. CLR. FROM EXISTING V-DITCH) AS SHOWN.
- 3 CLEAR AND GRUB EXISTING LANDSCAPING AND PREP FOR NEW ASPHALT INSTALLATION PER DETAIL: . EXTEND ASPHALT 3' NORTH OF NEW PUMP AS SHOWN.
- 4 INSTALL 18" TALL CMU RETAINING WALL EXTENSIONS PER DETAIL: . EXTEND WALL 3' NORTH OF NEW PUMP, AND 4' SOUTH OF NEW GENERATOR (1' MIN. CLR. FROM EXISTING V-DITCH) AS SHOWN.
- 5 INSTALL NEW 18" LG. TRENCH DRAIN EXTENSION PER DETAIL: 



Source: Pace Advanced Water Engineering, October 2018.

of the Project might be avoided or mitigated” (CEQA Guidelines Section 15204). The MND may also be used by responsible agencies with a responsibility for carrying out or approving the Project, including the discretionary permits or approvals deemed applicable to the Project.

## 3.0 FINDINGS

The District finds the proposed Project would not have a significant adverse effect on the environment based on the Initial Study/Environmental Checklist (see Section 4.0) and the Environmental Evaluation Discussion (see Section 5.0) of the Checklist Questions. For potentially significant effects, mitigation measures have been incorporated into the Project to ensure these impacts remain at less than significant levels. A Mitigated Negative Declaration (MND) is therefore proposed to satisfy the requirements of CEQA (PRC 21000 et. seq. 14 Cal. Code Resolution 15000 et. seq.). This conclusion is supported by the findings detailed in Section 3.1, Findings of No Significant Effect.

### 3.1 FINDINGS OF NO SIGNIFICANT EFFECT

**1. Aesthetics:** The Twin Lakes Pump Station is an existing facility and proposed Pump Station upgrades would not substantially alter the appearance of the existing Pump Station, would not include additional lighting, and would have no effect on aesthetics. The water tank site is currently occupied by two existing water tanks, which are partially visible from the SR-118. The Project would replace an existing 52-foot wide water tank with a new 78-foot wide water tank, while retaining an adjacent 95-foot wide water tank on the site. Replacing the smaller existing tank with a tank of similar size to the larger tank being retained would not substantially affect scenic vistas, scenic resources, the visual quality of the site or its surroundings, day or nighttime views, and would not result in significant light or glare effects. Therefore, aesthetic impacts would be less than significant.

**2. Agriculture and Forestry Resources:** Project implementation would not significantly affect agricultural resources. The Project water tank site and the Pump Station site are not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. There are no existing agricultural uses or forest lands on or adjacent to the proposed water tank or the Twin Lakes Pump Station. Although current zoning for the water tank site allows agricultural use, the site is currently occupied by two existing water tanks and is not utilized for agricultural purposes and the proposed water tank would not result in a substantial impact to agricultural resources. The proposed water tank site and the Twin Lakes Pump Station are not enrolled in a Williamson Act contract and do not include parcels zoned for forest or timberland. Impacts to agricultural resources would be less than significant.

**3. Air Quality:** The Project's emissions of criteria pollutants during construction or operations of the water tank or Pump Station upgrades would not exceed SCAQMD significant thresholds, and the proposed Project would not conflict with the implementation of the Air Quality Management Plan. Air quality impacts would be less than significant.

**4. Biological Resources:** The Pump Station upgrades would occur within the existing Twin Lakes Pump Station and therefore, would not impact biological resources. The water tank site does not contain sensitive plant communities or riparian habitats. Due to the relatively small size of the proposed water tank site, it would not substantially impair wildlife movement. No special-status plant species were observed on the site during a biological survey conducted in 2019 for preparation of the Biological Resources Letter, or during a Rare Plant Survey, which was conducted in May 2020 during the peak blooming period for special-status plants with potential to occur on the site.



There is a potential that the site or nearby areas may be used by nesting birds, which construction activities must avoid if present. No ordinance-sized oak trees were located within the survey area, however oak trees within the proposed staging area are of sufficient size to qualify for protected status. Mitigation measures have been incorporated to reduce potential impacts to biological resources (nesting birds, and protected oak trees) to below a level of significance.

**5. Cultural Resources:** The Pump Station upgrades would occur within the existing Pump Station that is fenced and primarily paved or barren ground, thus would have no impact to cultural resources. According to the Project's Phase I Cultural Resource Assessment, the water tank site vicinity is considered sensitive for the potential discovery of historic or archaeological resources. There is no indication that human remains may be buried on the site, however the compliance with State of California Health and Safety Code Section 7050.5 provides regulations if the Project were to result in discovery of human remains. A mitigation measure has been identified to provide monitoring during grading, and that describes a protocol for treatment of cultural resources in the event that such resources may be uncovered during ground disturbance, to reduce potential impacts to less than significant.

**6. Energy:** During water tank construction activities, the use of construction equipment would not represent a substantial proportion of annual gasoline or diesel fuel use in California. Existing regulations to minimize idling of off-road diesel-fueled equipment would apply to this Project. During operations, the new water tank and pump station upgrades would operate similarly to the existing tank to be removed and the existing pump station equipment, and operational energy consumption would not substantially differ from the existing conditions. The Project's energy demands for construction and operation would not necessitate additional energy facilities or distribution infrastructure or cause wasteful, inefficient or unnecessary consumption of energy. The Project would not conflict with or obstruct a state or local plan for renewable energy and therefore, energy impacts would be less than significant.

**7. Geology and Soils:** The Pump Station upgrades would occur within the confines of the existing Pump Station, which is approximately 0.25 miles from the nearest residences. Therefore, this Project would have no impact to people or structures associated with potential instability of geological conditions at this Pump Station site. The water tank site is not located within an Alquist-Priolo Earthquake Fault Zone. The proposed water tank site would consist of a welded steel tank constructed to current standards and codes, including adequate structural design for the existing geological conditions. The water tank site is not located within an area susceptible to seismically induced liquefaction and no residents or employees would occupy the site on a regular basis. The Project would be required to implement BMPs that would minimize potential erosion of exposed soils due to stormwater runoff. According to the Project's Phase I Cultural Resource Assessment, the water tank site is located within the Chatsworth sandstone formation and represents a marine environment dating 145 million to 66 million years back. In the event that paleontological resources may exist within the Project site, a mitigation measure has been identified to provide periodic monitoring of grading activities, and a discovery protocol in the event that a paleontological resource is uncovered, which would reduce potential impacts to less than significant.

**8. Greenhouse Gas Emissions:** Emissions of greenhouse gas (GHG) emissions during construction as well as operations of the Project's components would be well below any numerical

thresholds adopted or proposed by SCAQMD for GHG significance. The proposed water tank and Pump Station upgrades would not conflict with any plan, policy, or regulation that has been adopted to reduce GHG emissions. Therefore, no significant impacts are anticipated.

**9. Hazards and Hazardous Materials:** The Project would not involve the routine transport, use, or disposal of hazardous materials in substantial quantities. During construction and routine maintenance, relatively small amounts of hazardous substances, such as lubricants and solvents may be used. The Project water tank site and Pump Station site are not identified on a list of hazardous materials sites, according to data from the Department of Toxic Substances Control and are not located within the vicinity of a public airport. Implementation of the Project would not impact emergency access during construction or operations and would not interfere with emergency evacuation plans. In addition to supplying potable water to a new residential development, the Project components would also be used to maintain water pressure and supplies for fire hydrants within the development that would be relied on in fighting fires, including wildland fires that may threaten people and structures in the vicinity of the water tank site. No significant impacts related to hazards or hazardous materials impacts would result.

**10. Hydrology and Water Quality:** During construction, the Project would be required to implement BMPs to minimize erosion of exposed soils, as well as minimize the introduction of silt or other construction-related pollutants due to stormwater runoff. During operations, stormwater runoff from new impermeable surfaces including the water tank and surrounding paving would be conveyed from the site by the existing storm drain, and runoff from the Pump Station would continue to sheet flow from the site or be conveyed from the site by the existing stormwater drain inlet. The Project does not propose any onsite groundwater extraction that could affect groundwater levels. The small net increase in impervious surfaces at either of the Project site locations would not substantially interfere with groundwater recharge or drainage patterns. The Project components would not be located within a 100-year flood plain or a tsunami hazard zone, and no levee or dam structures are located upstream of the water tank site or Pump Station. The proposed water tank would consist of a welded steel tank constructed to current standards, including adequate structural design to reduce the risk of failure of the tank itself leading to an uncontrolled release of water. No significant hydrology or water quality impacts are anticipated from the Project's construction or operation.

**11. Land Use and Planning:** The proposed Project would provide upgrades to existing facilities, and would not alter the existing land uses at the water tank site or the pump station site. The Project would not physically divide an established community nor conflict with any applicable plan, policy, or regulation of an agency with jurisdiction over the Project site. No significant impacts are anticipated.

**12. Mineral Resources:** The Project would not result in the loss of availability of a known significant mineral resource. The proposed Pump Station upgrades would occur within an existing Pump Station, and therefore would have no impact regarding the availability of mineral resources. The water tank site is currently occupied by two existing water tanks and is located within an area designated MRZ-3 by the California Geological Survey. However, no commercial

mineral extraction has occurred within the water tank site. Therefore, impacts related to mineral resources would be less than significant.

**13. Noise:** During construction, noise levels generated by grading of the water tank site would be below the generally acceptable 75 dBA exposure level at the nearest sensitive receptor. The proposed Pump Station upgrades would not require grading activities and any potential construction activities would also fall below the generally acceptable 75 dBA exposure level at the nearest sensitive receptor. Operations of the water storage tank would not require daily or frequent access by personnel, and therefore, operations of the water storage tank would not result in adverse noise effects associated with vehicle use. During operations of the proposed Pump Station, the standby generator would be scheduled to run approximately 30 minutes each week for maintenance, however due to the distance to the nearest sensitive receptor of 0.23 miles, and topographic features associated with the hilly terrain, potential noise impacts due to infrequent scheduled operation of the standby generator would not exceed applicable noise ordinance levels. As all existing and planned residences in the vicinity of the proposed water tank and Pump Station upgrades would be considerably greater than 50 feet from heavy equipment that would operate onsite during construction, potential vibration impacts would be less than significant. Offsite temporary construction traffic noise effects at residences located along the haul route, including those along Iverson Road as well as the unpaved access road from Iverson Road to the water tank site, would be less than significant. During construction, haul trucks exporting soil materials along the unpaved access road would generate temporary vibrations at levels between distinctly perceptible and strongly perceptible in terms of human annoyance criteria at one residence nearest the haul route (approximately 25 feet). The offsite hauling vibrations at all other residences along the haul route, including paved roadways such as Iverson Road, as well as along the unpaved access road, would be less than the distinctly perceptible criteria, which would not be considered a significant environmental impact. A mitigation measure has been identified to require reduced speeds of large trucks on the unpaved access road to the site, which would reduce vibration levels at the nearest residence. Vibration impacts would be less than significant with mitigation incorporated.

**14. Population and Housing:** The Project would not displace people or housing. The proposed water tank and Pump Station Upgrades Project has been designed and sized specifically to meet the needs of the Deerlake Ranch residential development currently under construction, and therefore, would not induce further growth beyond the planned development that it would serve. The Project would have no impact regarding population and housing.

**15. Public Services:** The proposed Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered government facilities.

**16. Recreation:** The Project would not affect recreational facilities in the Project vicinity and does not propose or require the construction of recreational facilities.

**17. Transportation/Traffic:** The Project would not have a significant impact on transportation/traffic during construction or conflict with applicable policies, plans, programs or congestion management programs. During construction, material deliveries and workers would temporarily increase traffic volumes on roadways accessing the water tank and Pump Station

sites. All construction parking and staging would occur within or adjacent to the Project component sites and would not interfere with roadway operations. The Project does not propose facilities that would generate daily trips or vehicle miles traveled (VMT) on area roadways. The Project would not alter roadway design, or introduce a land use that would be incompatible with existing traffic patterns. Impacts related to emergency access would be less than significant, as a paved driveway would be provided for the water tank site and the Pump Station site would continue to be accessed by existing unpaved access road, the Project would not restrict or otherwise alter emergency access.

The Project's Construction Traffic Analysis conducted a sight distance evaluation at the water tank's access driveway intersection with Iverson Road, which determined that vehicles exiting the tank site would have unobstructed views of traffic on Iverson Road, extending approximately 375 feet to the north and approximately 735 feet to the south. Based on the Caltrans Highway Design Manual sight distance standards, the minimum stopping sight distance standard for a roadway with a 25 mile per hour (mph) speed limit, which is the posted speed limit on Iverson Road, would be 150 feet. Therefore, the existing sight distance for vehicles exiting the water tank site driveway would be more than adequate to meet the Caltrans criteria. Implementation of Mitigation Measure TRAF-1, would further ensure that during temporary construction activities, the sight distance for vehicles such as haul trucks exiting the access road onto the residential street would not be impaired by vehicles that may be parked on Iverson Road near access road entrance/exit. The Project's potential to result in substantial traffic impacts associated with temporary incompatible uses associated with construction-related transport of materials, equipment, and workers would be reduced to less than significant with mitigation.

**18. Tribal Cultural Resources:** LVMWD sent notification letters to representatives of Native American tribes that may have knowledge of cultural resources in the area, pursuant to the requirements of AB 52. A request for tribal consultation was received from the Fernandeno Tataviam Band of Mission Indians, and consultation was concluded on January 7, 2020. A mitigation measure has been identified to provide tribal monitoring during grading, and that describes a protocol for treatment of tribal cultural resources in the event that such resources may be uncovered during ground disturbance to reduce potential impacts to less than significant.

**19. Utilities and Service Systems:** Project implementation would not significantly affect utilities and service systems, including water supply, wastewater treatment, stormwater facilities, and electric power, natural gas and telecommunications facilities. The Project does not provide facilities that would generate wastewater or facilities that would provide such treatment nor does the Project require or result in the construction of new water facilities beyond the Project itself. The Project would not generate substantial amounts of solid waste during operations because no personnel would be employed onsite with the exception of periodic maintenance. The Project would be required to recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction debris to comply with Los Angeles Municipal County Code Section 5.408.1. The nearest landfill, Sunshine Canyon Landfill, has adequate capacity to remain operational for the next 28 years. Therefore, the Project would result in a less than significant impact to utilities and service systems.

**20. Wildfire:** The water tank site and Pump Station site are both located within a Very High Fire Hazard Severity Zone (VHFHSZ). As no daily traffic would be generated by either Project component, there would be no impact regarding physical interference with an emergency response or evacuation plan. The Project components would not be regularly occupied by personnel, with the exception of occasional maintenance and inspections. The Project would provide upgrades at existing facilities, and would not result in substantial changes in the current land use that could cause or exacerbate potential post-fire downstream flooding or landslides. Additionally, the Project would provide water storage and maintain pressure for fire hydrants for use by the fire fighters to protect people or structures in the event of wildfire, and potential impacts regarding wildfire would be less than significant.

### 3.2 MITIGATION MONITORING AND REPORTING PROGRAM

The section contains the mitigation measures to be imposed on the Project to reduce impacts to less than significant. Project mitigation measures consist of:

#### Biological Resources

**BIO-1:** Project activities, including but not limited to site preparation, construction, or fuel modification activities, with potential to disturb suitable bird-nesting habitat shall be prohibited within the breeding/nesting season for native bird species (February 15 through August 31) and raptors (January 1 through August 31). If Project activities cannot feasibly avoid the breeding bird season, thirty days prior to the disturbance of suitable nesting habitat, the applicant shall arrange for weekly bird surveys to detect any protected native birds in the habitat to be removed and ~~any other such habitat within properties adjacent to the Project~~ potential roosting or perch sites within 500-feet of the construction site, as access to adjacent areas allows. A qualified biologist with experience in conducting breeding bird surveys shall conduct the surveys. The surveys shall continue on a weekly basis with the last survey being conducted no more than three (3) days prior to the initiation of clearance/construction work. If Project activities are delayed or suspended for more than 7 days during the breeding season, additional surveys shall be conducted.

The field surveys shall determine if active nests of any bird species protected by the state or federal Endangered Species Acts, Migratory Bird Treaty Act, and/or the California Fish and Game Code Sections 3503, 3503.5, or 3511 are present at the limits of disturbance or within 500 feet of the limits of disturbance. The findings of these surveys shall be reported to the lead agency prior to initiation of vegetation clearance.

If active nests are identified during pre-construction surveys or discovered after construction has started, they will be protected with spatial buffers. Buffer size will be determined on a case-by-case basis by a qualified biologist based on site conditions, the species' life history and disturbance tolerance, the nest's distance to construction activities, and the type of construction ongoing in the vicinity of the nest. Buffers will be clearly delineated (e.g., using rope, flagging, signage); or they may also be defined by natural or man-made features that are deemed sufficient to prohibit access (e.g., tree rows, fences). Buffers will remain in place and will be

monitored and maintained regularly during the nesting season or until the biologist determines that the young have fledged or the nest failed or construction has been completed. A final report of nest monitoring will be provided to the lead agency upon conclusion of grading activities.

Mitigation Plan Requirements and Timing. Conduct nesting bird surveys and provide results to Las Virgenes Municipal Water District as lead agency prior to vegetation disturbance. Follow specified mitigation protocol if such survey results are positive for the presence of an active bird nest(s) within the survey area.

Monitoring. The Las Virgenes Municipal Water District as lead agency shall ensure compliance with this requirement.

#### **BIO-2: Oak Tree Protection Measures**

- The installation of chain link fencing not less than four feet in height around the protected zone of oak trees within the proposed staging area. Said fencing shall remain in place throughout the entire period of development. The protected zone in the case of the specific trees within the proposed staging area is 5 feet from the extent of the tree canopy in all directions.
- No construction materials are to be stored or discarded within the Protection Zone of any oak. Rinse water, concrete residue, liquid contaminants (paint, thinners, gasoline, oils, etc.) of any type shall not be deposited in any form at the base of an oak.
- No vehicles shall be parked within the Protection Zone of an oak.

Mitigation Plan Requirements and Timing. Install temporary protective fencing around oak trees near the staging area prior to, and throughout, construction activities.

Monitoring. The Las Virgenes Municipal Water District as lead agency shall ensure compliance with these design requirements.

#### **Cultural Resources**

**CUL-1:** Prior to any ground-disturbing activities, the lead agency shall retain a qualified archaeologist that meets the Secretary of Interior qualifications and a Native American monitor with cultural affiliation with the vicinity according to the Native American Heritage Commission. Both monitors shall be at the water tank site during grading or ground disturbance of the top five feet of soil, or until bedrock is encountered. In the event a cultural resource and/or tribal cultural resource is discovered, the archaeological monitor will collect any important prehistoric or older historic (pre-1950s) cultural material that may be uncovered by these activities.

If potentially significant archaeological materials are discovered within an undisturbed context during the Project's earth-moving activities, the archaeological monitor shall stop work within a 50-foot radius, and crews and equipment shall be

diverted away from the discovery until the nature and/or significance of the find(s) has been evaluated. If, upon assessment by a qualified archaeologist, the find is not determined to be significant, then construction may resume. If the find is determined to be potentially significant, then the lead agency will be immediately notified of the discovery.

Construction will not resume in the locality of the discovery until consultation between the Project archaeologist, the Project manager, the lead agency, and the Applicant's representative takes place and a conclusion approved by the lead agency is reached. Should pre-contact cultural resources be discovered, the lead agency, Project archaeologist, and Project Applicant shall consult with the Fernandño Tataviam Band of Mission Indians (FTBMI) regarding the appropriate treatment and disposition of the discovered resources. Should any discovered significant resource and/or tribal cultural resource not be a candidate for avoidance or preservation in place, a research design shall be developed by the archeologist prior to further survey work, evaluation tasks, or data recovery of the significant resource.

A final report of archaeological monitoring shall be provided to the lead agency and disseminated to consulting Tribes under AB52, upon conclusion of grading activities. Any artifacts found through monitoring, or which have been collected in response to a "discovery" situation, shall be returned to the Project property after the completion of any basic cataloging and recordation, and reburied in a location that shall be as hidden as possible from the public. The location for reburial of any artifacts within the site will be determined in consultation between the FTBMI and the lead agency and the reburial shall be conducted with a representative from the FTBMI present. The location of the reburial will be described to any qualified Native American Tribal Group representative upon request.

Mitigation Plan Requirements and Timing. Prior to ground disturbance, retain a qualified archaeologist and a Native American tribal monitor to be onsite during grading activities at the water tank site, and provide the Las Virgenes Municipal Water District as lead agency with copies of contracts (or other verification) that such services will be provided. Follow specified discovery protocol if such monitoring results are positive for the presence of cultural and/or tribal cultural resources within the soils being disturbed.

Monitoring. The Las Virgenes Municipal Water District as lead agency shall ensure compliance with this requirement.

## **Geology and Soils**

**PAL-1:** During rough grading activities for the water tank site that may encounter bedrock, a qualified paleontological monitor, approved by the lead agency, shall spot check grading operations once daily to determine if fossil-bearing bedrock is being encountered. If the paleontological monitor observes fossils or fossil-bearing bedrock, full-time monitoring of grading activities shall begin immediately for the duration of the rough grading.

Small fossil materials observed by the monitor during grading may be collected by hand if safe to do so. If significant fossils are encountered, the monitor shall have the ability to halt construction within the area the discovery, and divert construction activities to a distance of 50-feet until the lead agency is notified of the discovery and a qualified senior paleontologist can evaluate the nature and/or significance of the find(s).

Construction shall not resume in the locality of the discovery until consultation between the consulting paleontologist, the Project manager, and the lead agency takes place and a conclusion is reached and approved by the lead agency regarding the significance and prescribed treatment of the resource. If the fossil find is determined to be significant enough to warrant further evaluation and/or extraction, then additional evaluation or fossil recovery tasks may be required. Such tasks would be led by a qualified paleontologist at the direction of the lead agency, if the resource cannot be avoided.

A final Monitoring Report will be produced by the paleontological monitor that discusses all monitoring activities and any fossils recovered through monitoring, to be presented to the lead agency for the Project record. All evaluation, fossil recovery, or monitoring reports that are generated as a response to the discovery of a significant paleontological resource shall be submitted to the Natural History Museum of Los Angeles County as part of the Project record.

Mitigation Plan Requirements and Timing. Prior to ground disturbance, retain a qualified paleontological monitor to provide once-daily spot-checking during grading activities at the water tank site to determine if fossil-bearing material is encountered, and provide the Las Virgenes Municipal Water District as lead agency with copies of contracts (or other verification) that such services will be provided. Follow specified discovery protocol if such monitoring results are positive for the presence of fossils and/or fossil-bearing material within the water tank site grading area.

Monitoring. The Las Virgenes Municipal Water District as lead agency shall ensure compliance with this requirement.

## **Noise**

### **NOI-1:**

During construction activities, haul trucks traveling along the unpaved access road between Iverson Road and the Twin Lakes water tank site shall reduce speeds to 5 miles per hour in the vicinity of residences (within approximately 50 feet) to reduce vibration levels experienced at residences. Temporary signage shall be placed along the affected access road segment indicating the appropriate speed limitation.

Mitigation Plan Requirements and Timing. At the start of Project mobilization of equipment, provide temporary signs along the unpaved Project access road restricting speeds to five mph within approximately 50 feet of the adjacent residence, to be removed following completion of the new water tank.



Monitoring. The Las Virgenes Municipal Water District as lead agency shall ensure compliance with this requirement.

**Transportation/Traffic**

**TRAF-1:** During construction activities, temporary no parking signs or traffic cones shall be placed on Iverson Road north and south of the Twin Lakes water tank site access driveway to ensure that adequate sight distances are maintained for trucks exiting the Project Site.

Mitigation Plan Requirements and Timing. At the start of Project mobilization of equipment, provide temporary no parking signs or traffic cones on Iverson Road to prevent parking near the entrance to the water tank site.

Monitoring. The Las Virgenes Municipal Water District as lead agency shall ensure compliance with this requirement.

**Tribal Cultural Resources**

Mitigation measure CUL-1 shall apply.

## 4.0 INITIAL STUDY

### CALIFORNIA ENVIRONMENTAL QUALITY ACT INITIAL STUDY AND CHECKLIST

1. **Project title:**  
Twin Lakes Water Storage Tank and Pump Station Upgrades
2. **Lead agency name and address:**  
Las Virgenes Municipal Water District  
4232 Las Virgenes Road  
Calabasas, California 91302
3. **Contact person and phone number:**  
Ms. Mercedes Acevedo, E.I.T, Assistant Engineer  
Phone: (818) 251-2147
4. **Project location:**  
The Project's Twin Lakes Water Tank Site and the Twin Lakes Pump Station are located in western Los Angeles County within Section 1, Township 2 North, Range 17 West; and Section 13, Township 2 North, Range 17 West; respectively, of the mapped area of the United States Geologic Survey 7.5' Oat Mountain Quadrangle. The water tank site consists of two adjacent water tanks with paved perimeter driveways and fencing located approximately 500 feet north of the SR-118 freeway in unincorporated Los Angeles County. The Pump Station site consists of approximately 0.25 acres in the northern portion of Chatsworth Park South in the Chatsworth Community Area of the City of Los Angeles.
5. **Project sponsor's name and address:**  
Las Virgenes Municipal Water District  
4232 Las Virgenes Road  
Calabasas, California 91302
6. **General plan designation:**  
Water Tank Site – Rural Land  
Pump Station - Open Space
7. **Zoning:**  
Water Tank Site - A-2-2  
Pump Station - OS
8. **Description of project:**  
The Project would remove an existing 400,000-gallon potable water storage tank (one of two existing tanks on the site) and replace it with a new 1,000,000-gallon water storage tank. Installation of the new water tank would include grading approximately 0.21 acres to provide a level pad at a similar elevation as an adjacent 1,600,000-gallon water tank on the site that would be retained. The Project would also include installation of additional water pumping equipment within the fenced, approximately 0.25-acre Twin Lakes Pump Station facility located approximately 1.2 miles southwest of the Twin Lakes Water Tank Site. The purpose of the additional water storage and pumping capacity is to provide adequate supplies and pressure to the Deerlake Residential Tract No. 53138 currently under construction.
9. **Surrounding land uses and setting:**  
The water tank site is surrounded by vacant land, and nearby uses include the SR-118 freeway to the south, single-family residences to the west and north, and multi-family residences to the east. The Pump Station is an existing facility in the northern, undeveloped portion of Canoga Park South.
10. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.):**  
None.

**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.

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Aesthetics                      | <input type="checkbox"/> Agriculture Resources         | <input type="checkbox"/> Air Quality                        |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy                             |
| <input checked="" type="checkbox"/> Geology /Soils       | <input type="checkbox"/> Greenhouse Gas Emissions      | <input type="checkbox"/> Hazards & Hazardous Materials      |
| <input type="checkbox"/> Hydrology/Water Quality         | <input type="checkbox"/> Land Use/Planning             | <input checked="" type="checkbox"/> Mineral Resources       |
| <input type="checkbox"/> Noise                           | <input type="checkbox"/> Population/Housing            | <input type="checkbox"/> Public Services                    |
| <input checked="" type="checkbox"/> Recreation           | <input checked="" type="checkbox"/> Transportation     | <input type="checkbox"/> Tribal Cultural Resources          |
| <input type="checkbox"/> Utilities/Service Systems       | <input type="checkbox"/> Wildfire                      | <input type="checkbox"/> Mandatory Findings of Significance |

**DETERMINATION:**

On the basis of this initial evaluation:

- I find that the proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.
- I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.
- I find that the proposed project **MAY** have a "potentially significant impact" or "less than significant with mitigation incorporated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project. Therefore, an EIR Addendum will be prepared.

  
Signature

05/24/2020  
Date

Name: Mercedes Acevedo, E.I.T., Assistant Engineer

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**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 Section XVII, "Earlier Analyses," 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.

**ENVIRONMENTAL IMPACTS**

(Explanations of all potentially and Less Than Significant Impacts are included in Section 5 *Discussion of Initial Study Environmental Checklist*)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>I. AESTHETICS.</b> Would the project:				
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>II. AGRICULTURE AND FORESTRY RESOURCES.</b> Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict the existing zoning for agricultural use, or a Williamson Act Contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>III. AIR QUALITY.</b> Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project result in:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>IV. BIOLOGICAL RESOURCES.</b> Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>V. CULTURAL RESOURCES.</b> Would the project:				
a. Cause a substantial adverse change in significance of a historical resource as defined in CEQA Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in significance of an archaeological resource pursuant to CEQA Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>VI. ENERGY.</b> Would the project:				
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>VII. GEOLOGY AND SOILS.</b> 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>VIII. GREENHOUSE GAS EMISSIONS.</b> Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>IX. HAZARDS AND HAZARDOUS MATERIALS.</b> Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>X. HYDROLOGY AND WATER QUALITY.</b> Would the proposal result in:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 a substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>XI. LAND USE AND PLANNING.</b> Would the project:				
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XII. MINERAL RESOURCES.</b> 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XIII. NOISE.</b> Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XIV. POPULATION AND HOUSING.</b> 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XV. PUBLIC SERVICES.</b> Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XVI. RECREATION.</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XVII. TRANSPORTATION/TRAFFIC.</b> Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>XVIII. TRIBAL CULTURAL RESOURCES.</b> Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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
<b>XIX. UTILITIES AND SERVICE SYSTEMS.</b> Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XX. WILDFIRE.</b> 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>XXI. MANDATORY FINDINGS OF SIGNIFICANCE.</b>				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Does the project have impacts which are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of an individual 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).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects which cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## 5.0 DISCUSSION OF INITIAL STUDY ENVIRONMENTAL CHECKLIST

The following discussion of environmental impacts anticipated to result from the proposed Project consists of a brief explanation for each of the answers provided in the Initial Study/Environmental Checklist. For each issue addressed below, the impacts associated with this Project have been determined to be “Less Than Significant with Mitigation Incorporated”, “Less Than Significant”, or “No Impact.” Source data and information has been provided to substantiate the level of significance determination for each environmental topic. The topics determined to be “Less Than Significant with Mitigation Incorporated” will have mitigation measures identified that would reduce impacts to a less than significant level. These mitigation measures have been incorporated into the Project’s Mitigation Monitoring and Reporting Program (MMRP) in Section 3.0.

### 5.1. AESTHETICS

The Twin Lakes Pump Station is an existing facility, which is not visible from public roadways or recreation areas, but is visible from a nearby railway, which is located atop a slope approximately 80 feet higher than the elevation of the existing Pump Station. Proposed Pump Station upgrades would not substantially alter the appearance of the existing Pump Station, would not include additional lighting, and would have no effect on aesthetics. Therefore, the remainder of this evaluation of aesthetic impacts will focus on potential effects of the proposed water tank.

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

**Less Than Significant Impact.** A scenic vista is a panoramic public view from a specific location, such as a highway, a park, a hiking trail, river/waterway, or even from a particular neighborhood.<sup>4</sup> This discussion evaluates the potential impacts of the proposed water tank on scenic views from public roadways and recreation areas including the SR-118 Freeway, Topanga Canyon Boulevard, and open space and public trails.

The water tank site is located approximately 500 feet north of the SR-118 Freeway in an unincorporated portion of Los Angeles County at the northwest margins of urban development of the San Fernando Valley, where land uses transition from urban/suburban uses to open space. Vistas in the Project vicinity are dominated by mountains and ridgelines that define the viewshed north of the San Fernando Valley, as well as undeveloped hillsides and ridgelines that rise from the northern extent of urban development to distant mountains. The Project would replace the existing 400,000-gallon water tank with a new, slightly larger 1,000,000-gallon water tank and retain an existing 1,600,000-gallon tank. The new tank would be approximately 28 feet wider than the existing tank to be removed.

The proposed tank location is partially visible from the SR-118 Freeway travelling in both eastern and western directions. **Figure 5.1-1, Existing View**, shows a representative view of the existing two tanks that currently occupy the site as viewed from SR-118 westbound travel

<sup>4</sup> Los Angeles County, General Plan Chapter 9: Conservation and Natural Resources Element, Adopted October 6, 2015.



Source: Google Maps, Street View.

lanes. As shown in Figure 5.5-1, views from SR-118 of the existing tanks are somewhat screened and are limited by topography and vegetation. The proposed Project would replace the smaller of the two existing water tanks with a new tank that would be smaller in diameter than the existing larger existing tank to be retained on the site. The water tank site grading would reduce the finished floor elevation by 6 feet compared to the existing condition, which would result in the new tank extending approximately 6 feet higher than the adjacent tank to be retained, which would not substantially alter views from the SR-118 Freeway. Views of the water tank site from Topanga Canyon Boulevard would be constrained by existing topographic features associated with the hilly terrain that exists in the vicinity. Vistas in the Project vicinity are dominated by mountains and ridgelines that define the viewshed north of the San Fernando Valley, as well as undeveloped hillsides and ridgelines that rise from the northern extent of urban development to distant mountains, which rise to over 3,000 feet above sea level (asl). The proposed replacement water tank would therefore not have a substantially adverse effect on scenic vistas of mountains to the water tank site is located within a suburban residential development in the vicinity of the Michael D. Antonovich Regional Park, Rocky Peak Park, and Indian Springs Open Space, all located north of the site. Southerly views from elevated portions of trails in these open space areas overlook the Twin Lakes water tank site and surrounding residential development, as well as the urban expanse of the greater San Fernando Valley. The proposed replacement of a 400,000-gallon water tank with a 1,00,000-gallon water tank would not have a substantial adverse effect on scenic vistas from publicly available open space, as it would not substantially change the existing condition of public open space views currently available. As a very minor component of the existing development of the San Fernando Valley and vicinity, the water tank would not substantially block, or dominate views of the existing urban development that currently comprise southerly views from open space and public trails. Therefore, the Project's effect on views from roads and public recreation areas, including trails, would be less than significant.

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

***Less Than Significant Impact.*** The SR-118 Freeway, which is located approximately 500 feet south of the water tank site, is listed as "Eligible State Scenic Highways – Not Officially Designated" within the vicinity of the water tank site.<sup>5</sup> Although a portion of SR-27 (Topanga Canyon Road), is a designated scenic highway, the segment for which the designation applies to is located within in the Santa Monica Mountains, and is approximately 9.5 miles to the south of the Project Site. No roadway segment in the Project site vicinity is officially designated as a State or County Scenic Highway.

The water tank site is currently occupied by two existing water tanks, which are partially visible from the SR-118 as shown in Figure 5.1-1. The proposed replacement of an existing 52-foot wide water tank with a new 78-foot wide water tank, while retaining an adjacent 95-foot wide water tank on the site would not substantially alter views of any scenic resources visible from the SR-118 Freeway. Minor grading to reduce the elevation of the existing graded pad by approximately six feet would not remove or damage scenic resources within a state scenic highway. As such, the

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<sup>5</sup> Los Angeles County Department of Regional Planning, General Plan Figure 9.7: Scenic Highways, Adopted October 6, 2015.



Project would not damage scenic resources, including trees, rock outcroppings, or historic buildings within a state scenic highway. Therefore, the Project would have less than significant impacts with regard to this issue.

- c) Would the project substantially degrade the existing visual character or quality of public views of the site and surroundings in a nonurbanized area, or conflict with applicable zoning and other regulations governing scenic quality in an urbanized area, would the project?**

***Less Than Significant Impact.*** The proposed water tank site is located between a freeway and a residential community in the northwestern San Fernando Valley. The residential development adjacent to the water tank site is located where the urban/suburban development of the San Fernando Valley transitions to open space and undeveloped mountainous areas. The Project would remove the smaller of two existing water tanks from the site, and replace it with a new tank that is larger than the tank being removed, but smaller than the existing tank that would be retained on the site. Additionally, the replacement tank would be painted a neutral earth tone color, similar to the existing water tank to be removed and the existing tank to be retained, which would blend with the coloration of existing open space areas to the north, minimizing visual contrast with the surroundings. As such, the new water tank would not substantially alter the visual character of the site, in that there are currently two water tanks on the site, and there would continue to be two water tanks on the site with implementation of the Project. Although the new tank would be larger than the tank being removed, it would be smaller in diameter, and a similar height as the existing tank that would be retained, and therefore, changes in the visual character of the water tank site or the visual quality of the vicinity would be less than significant.

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

***Less Than Significant Impact.*** The water tank site is currently open space with an existing water tank located onsite.

#### Lighting

The proposed water tank would not result in additional lighting that would differ from the existing site conditions. In addition, the Project location would not be a substantial source of light in the context of the overall San Fernando Valley and would not affect roadway traffic. Therefore, Project lighting impacts would be less than significant.

#### Glare

Glare is defined as a harsh uncomfortably bright light, and can be either direct from a light source, or indirect from reflected light. The reflection of light from smooth surfaces such as window glass may be perceived as glare. Buildings constructed of highly reflective materials from which the sun reflects at a low angle may cause adverse glare. The water tank site is partially visible from roadways, but existing trees would provide visual screening and the new tank would be painted a neutral color, similar to the existing tanks that currently occupy the site, which would not produce substantial glare. Therefore, potential glare impacts would be less than significant.

## 5.2 AGRICULTURE AND FORESTRY RESOURCES

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

**No Impact.** According to the California Natural Resources Agency, Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program (FMMP), the Project site is not located within an area containing Prime Farmland, Unique Farmland, or other Farmland of Statewide Importance at the proposed water tank site or the existing Pump Station.<sup>6</sup> Therefore, the Project would have no impact on FMMP-designated Important Farmlands.

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

**Less Than Significant Impact.** The proposed replacement water tank and pump station upgrades would occur within sites that are currently developed with existing water supply infrastructure, and there are no existing agricultural uses within, or adjacent to the proposed Project sites. The proposed water tank would replace an existing water tank located near the top of a hill with relatively steep, undeveloped slopes on all sides. The hill on which the tank site is located is surrounded by existing development, consisting of the SR-118 freeway to the south, and residential development to the west, north, and east. The water tank site is not located within an Agricultural Resource Area as designated by the County General Plan.<sup>7</sup> Although the water tank site is located on land currently zoned A-2, which allows agricultural use, the site is currently occupied by two existing water tanks and is not utilized for agricultural purposes. Due to the relatively small scale of the water tank site, steep topography, nearby existing residences, and the lack of any existing agricultural use of the site and vicinity, the proposed replacement water tank would not result in a substantial impact to agricultural resources associated with the site's existing zoning. The Pump Station improvements would occur within an existing Pump Station site and will be consistent with existing uses. The Twin Lakes Water Tank site and the Twin Lakes Pump Station site are not located within Williamson Act Contract Land.<sup>8</sup> Therefore, the Project's potential to result in environmental impacts due to conflict with existing zoning for agricultural use or a Williamson Act contract would be less than significant.

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

**No Impact.** The Project water tank site is currently occupied by two existing water tanks and is not currently used as farmland or for agricultural uses. The Pump Station site would improve an

<sup>6</sup> California Department of Conservation, Los Angeles County Important Farmland 2016, Accessed on October 28, 2019 at: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/los16.pdf>.

<sup>7</sup> Los Angeles County Department of Regional Planning, General Plan Figure 9.5: Agricultural Resources Areas Policy Map, Adopted October 6, 2015.

<sup>8</sup> California Department of Conservation, Williamson Act Contract Land, 2017.

existing Pump Station site that is currently in use and contains no agricultural uses. Therefore, the Project would have no impact regarding conversion of farmland to non-agricultural uses.

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

**No Impact.** The Project site does not include parcels zoned for forest land, timberland, or timberland production by the County Zoning Code. Therefore, no impact would occur.

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

**No Impact.** As noted above, neither site has agricultural land in active production nor agricultural production adjacent to it. The site is also not occupied by forest land. Therefore, the Project would have no impact.

### 5.3. AIR QUALITY

This analysis is based on the California Emissions Estimator Model (CalEEMod.2016.3.2) modeling calculations provided in **Appendix A**. CalEEMod is a statewide land use emissions computer model developed for the California Air Pollution Officers Association (CAPCOA) in collaboration with the California Air Districts to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with a variety of land use projects.

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

***Less Than Significant Impact.*** The proposed Project site is located within the South Coast Air Basin (SCAB), which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. Air quality conditions in the SCAB are under the jurisdiction of the SCAQMD.

National Ambient Air Quality Standards (AAQS) were established in 1971 for six pollutants, with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. Because California had established AAQS several years before the Federal action, and because of unique air quality problems introduced by the restrictive dispersion meteorology that affects much of the State, there is a considerable difference between State and Federal clean air standards. These standards are the levels of air quality pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. Subsequent legislation such as the Federal Clean Air Act Amendments of 1990, and further scientific study, has resulted in modifications and additions to National and State AAQS regulations.

State and Federal laws require jurisdictions that do not meet clean air standards to develop plans and programs that will bring those areas into compliance. The SCAQMD is the agency responsible for regulating air pollution in the Project area. The SCAQMD 2016 Air Quality Management Plan (AQMP) evaluates integrated strategies and control measures to reduce pollutant emissions and meet specified deadlines for attainment of clean air standards.

The Project proposes to replace an existing water storage tank with a larger tank, and install additional equipment at an existing pumping station, in order to provide adequate water storage and pressure to the Deerlake Ranch residential development that is currently under construction. The proposed upgrades to the water supply facilities have been sized to meet the needs of the residential uses currently being developed, and therefore would not induce unplanned growth in the area. As the future emission forecasts used in developing the AQMP are primarily based on demographic and economic growth projections,<sup>9</sup> and as the Project would not result in future growth, and is the replacement of a potable water storage tank with another potable water storage tank and installation and operation of additional pumps and related equipment at an existing pumping station, the Project would not conflict with, or interfere with implementation of the current air quality plan.

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<sup>9</sup> South Coast Air Quality Management District, Final 2016 Air Quality Management Plan, March 2017.

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

***Less Than Significant Impact.*** The SCAQMD provides quantitative thresholds of significance for use in CEQA analyses<sup>10</sup> in determining if a project's net increase in emissions of criteria pollutants would substantially contribute to regional air quality impacts. The proposed water tank component of the Project would require removal of an existing water tank, and grading of approximately 0.21 acres to lower the elevation of the existing building pad to about the same level as the existing adjacent tank to be retained, and to widen the building pad on which to construct the new larger tank. Construction would primarily consist of assembly of a new welded steel cylindrical water tank with a diameter of 78 feet and a sidewall height of 38 feet. Additional construction activities would include providing a paved driveway around the new tank, painting exterior surfaces, and replacement/extension of the perimeter security fencing. Grading activities would require export of approximately 3,000 cubic yards of soil/rock material, which would be hauled approximately fifty miles to a disposal site in Irwindale, CA. The Project's installation of additional pumps and associated equipment at the Twin Lakes Pump Station would not require demolition, grading, construction of buildings, application of architectural coatings, or substantial paving activities that would contribute to construction-related emissions.

**Construction**

During construction, emissions of air pollutants would be generated primarily from use of heavy equipment onsite for construction of the new water tank, including exhaust from internal combustion engines, and dust from earth moving activities. Dust emissions generated during construction are called "fugitive emissions" because such emissions are not amenable to collection and discharge through a controlled source. SCAQMD Rule 403 provides regulatory dust control measures that would apply to the minor grading related to this Project because of the non-attainment status of the SCAB for particulate matter 10 microns in diameter (PM-10). The following dust control measures would be implemented during construction as needed to comply with Rule 403 regulations:

- Apply soil stabilizers or moisten inactive areas.
- Prepare a high wind dust control plan.
- Stabilize previously disturbed areas if subsequent construction is delayed.
- Water exposed surfaces as needed to avoid visible dust leaving the construction site (typically 3 times/day).
- Minimize in-out traffic from construction zone.
- Sweep streets daily if visible soil material is carried out from the construction site.

The CalEEMod 2016.3.2 computer model was used to quantify potential air pollutant emissions that the water tank construction activities could generate. The installation of additional equipment at the existing Pump Station would not require additional grading or substantial earth movement

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<sup>10</sup> South Coast Air Quality Management District, Air Quality Analysis Handbook webpage, Accessed at: <https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook> on November 11, 2019.

activities. **Table 5.3-1, Construction Activity Maximum Daily Emissions**, provides the results of the construction emission modeling.

**Table 5.3-1**  
**Construction Activity Maximum Daily Emissions**

	Criteria Air Quality Pollutants					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM-10	PM-2.5
<b>Maximum Daily Emissions</b> <sup>a</sup>	4.2	82.9	32.3	0.2	6.5 <sup>b</sup>	2.7 <sup>b</sup>
<b>SCAQMD Thresholds</b> <sup>c</sup>	<b>75</b>	<b>100</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>55</b>
Significant Impact?	No	No	No	No	No	No
Source: CalEEMod.2016.3.2 output June 25, 2020 in Appendix A.						
<sup>a</sup> Winter or summer season emissions, whichever is greater.						
<sup>b</sup> Pursuant to SCAQMD Rule 403, construction emissions reflect application of water to exposed surfaces two times daily for dust suppression.						
<sup>c</sup> South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, Rev. March 2015.						

As shown in Table 5.3-1, based on the results of the CalEEMod analysis, the maximum daily emissions estimated for the Project from construction activities would be below significance thresholds established by SCAQMD for the criteria pollutants analyzed. Therefore, air quality impacts due to Project construction would be less than significant.

### **Operation**

During operations, the proposed water tank and pump station sites would only be accessed periodically by personnel for inspections or maintenance, which would not substantially differ from the existing number of such periodic access of these facilities, and therefore daily trips would not be generated for Project operations. Likewise, as the water tank site is currently occupied by a similar water storage tank that would be removed, electricity use at the water tank site during operations would not substantially differ from existing conditions. The scheduled operation of the proposed standby generator at the pump station for approximately 30 minutes once per week was included in the Project's CalEEMod emissions estimation model. Daily operations would result in an incremental increase in electricity use to operate the additional one new 75-horsepower pump and two new 100-horsepower pumps, which would not generate substantial emissions during operations. As shown in Appendix A, maximum daily emissions of each criteria pollutant from operations of the proposed Project would not exceed 0.2 pounds per day, which would be far below any applicable SCAQMD threshold. Therefore, emissions from operations would not violate an applicable air quality standard or contribute substantially to an existing or projected air quality violation, and impacts would be less than significant.

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

**Less Than Significant Impact.** A significant impact may occur if a project were to generate pollutant concentrations to a degree that would significantly affect sensitive receptors. Sensitive receptors are populations that are generally more susceptible to the effects of air pollution than the population at large. Land uses considered to be sensitive receptors include residences, long-

term care facilities, schools, playgrounds, parks, hospitals, and outdoor athletic facilities. The closest sensitive receptors that could potentially be subject to localized air quality impacts associated with the proposed Project would be existing residences in the vicinity of the water tank site.

A Localized Significance Threshold (LST) analysis was conducted for the proposed Project's onsite emissions. LSTs are only applicable for certain criteria pollutants: oxides of nitrogen (NOx), carbon monoxide (CO), and particulate matter (PM-10 and PM-2.5). The SCAQMD provides screening tables to determine the potential significance of a proposed project. The screening tables provide thresholds for project sites of 1-, 2-, and 5-acres, at various distances from sensitive receptors. For this evaluation, the threshold values for a 1-acre site (the most stringent LST screening table size criteria), and a 200-meter source-receptor distance was used to evaluate LST impacts at the nearest residences. For the proposed Project, the primary source of possible LST impact would be during construction. During construction, the Project would be required to implement dust control measures to comply with SCAQMD Rule 403, which would include watering disturbed surfaces to minimize fugitive dust (PM10 and PM2.5).

The Project's maximum daily onsite construction emissions during any phase and during any season is shown in **Table 5.3-2, Localized Significance Thresholds and On-Site Construction Emissions**. As estimated by CalEEMod and shown in Appendix A, daily onsite construction emissions during any other phase or season would be less than shown in Table 5.3-2As shown in Table 5.3-2, onsite emissions during any phase of construction activities would not exceed any applicable LST, and the Project's potential to expose sensitive receptors to substantial pollutant concentrations during construction would be less than significant.

**Table 5.3-2  
Localized Significance Thresholds and On-Site Construction Emissions**

	<b>CO</b>	<b>NOx</b>	<b>PM-10</b>	<b>PM-2.5</b>
Max. Construction Emissions <sup>a</sup>	17.7	22.1	3.6 <sup>b</sup>	2.3 <sup>b</sup>
<b>Localized Significance Thresholds</b>				
West San Fernando Valley 1-acre at 200 meters	<b>2,096</b>	<b>157</b>	<b>59</b>	<b>18</b>
Significant Impact?	No	No	No	No
Source: CalEEMod Output June 25, 2020 in Appendix A. <sup>a</sup> Winter or summer season emissions, whichever is greater. <sup>b</sup> Pursuant to SCAQMD Rule 403, construction emissions reflect application of water to exposed surfaces two times daily for dust suppression.				

The estimated duration of overall construction activities would be approximately six months, of which the estimated duration of grading and soil export activities onsite would be less than one week.

SCAQMD LST screening thresholds are only applicable for onsite emissions in relation to the nearest sensitive receptor. Offsite emissions (transportation of equipment, materials, and personnel) are not subject to LST evaluations, as estimated emissions from offsite activities are not concentrated at a single point but are instead dispersed along the entirety of the roadway(s)

being traveled, rather than a fixed distance from a single receptor by which to evaluate significance.

Substantial pollutant concentrations are typically found in areas directly adjacent to congested roadway intersections, and/or industrial facilities. As the Project would upgrade existing water storage and pumping infrastructure facilities, and as operations of the proposed Project would not generate daily trips that would contribute to a worsening of traffic levels, operational impacts related to substantial pollutant concentrations would be less than significant.

**d) Would the project create objectionable odors affecting a substantial number of people?**

***Less Than Significant Impact.*** Although offensive odors seldom cause physical harm, they can be annoying and cause concern. Construction activities typically associated with strong odors, including asphalt paving and painting, would be temporary and would occur at a substantial distance of approximately 800 feet from the nearest existing residences in the vicinity of the water tank site. The nearest sensitive receptors in the vicinity of the Pump Station that would be upgraded are residences located approximately 0.25 miles to the east, which would not be subject to concentrated odors during installation of the Pump Station upgrades. During operations, the proposed water tank would not produce odors that would be noticeable offsite, and the Pump Station, which is located a considerable distance from existing residences, is an existing condition that daily operations would continue in a similar fashion as it currently does, and would not be anticipated to generate objectionable odors that could affect a substantial number of people. Potential odor impacts would be less than significant.



## 5.4. BIOLOGICAL RESOURCES

This section is based on the Biological Resources Letter prepared by Envicom Corporation (January 16, 2020), and a Rare Plant Survey Report (Spring Survey) prepared by Envicom Corporation (June 25, 2020), which are included as **Appendix B.1 and Appendix B.2**, respectively. The Rare Plant Survey fieldwork was conducted in May 2020, during the peak blooming period for special-status plant species with potential to occur. As the Pump Station upgrades would occur within the confines of the existing Pump Station, which is fenced, and primarily paved or barren ground, that component of the Project would have no impact on biological resources, and therefore, this analysis will focus on the undeveloped water tank site.

Project grading activities would primarily occur within the existing water tank site, which currently is developed with a water tank and surrounding pavement and includes a barren/sparsely vegetated rocky slope between existing water tanks (see Vegetation Map in Appendix B.1 Figure 2). Grading of the water tank site would extend approximately 10 to 15 feet beyond the north and south sides of the existing pavement, within vegetated areas totaling approximately 0.03 acres, which would be paved by the project. During construction, a staging area for storing equipment and materials would be established along the dirt access road as shown in Figure 2-2, which would consist of approximately 0.57 acres, and is approximately the same area where similar staging occurred for construction of the existing 1,600,000-gallon tank being retained on the site. Following construction activities, all equipment and construction materials would be removed, and the temporary staging area will be hydroseeded with a mix of native species to hasten revegetation and recovery of temporary vegetation disturbance.

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

***Less than Significant with Mitigation Incorporated.*** Special-status plant species either have unique biological significance, limited distribution, restricted habitat requirements, particular susceptibility to human disturbance, or a combination of these factors.

### **Special-Status Plant Species**

Special-status plant species are those plants listed, proposed for listing, or candidates for listing as Threatened or Endangered by the U.S. Fish and Wildlife Service under the Federal Endangered Species Act (FESA); those listed or proposed for listing as Rare, Threatened, or Endangered by the CDFW under the California Endangered Species Act (CESA); and plants on the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants with a California Rare Plant Rank of 1A (plants presumed extirpated in California and either rare or extinct elsewhere), 1B (plants considered to be rare, threatened, or endangered species in California and elsewhere), 2A (plants presumed extirpated in California, but more common elsewhere), and 2B (plants considered rare, threatened, or endangered in California, but more common elsewhere). CEQA Guidelines, Section 15125(a), also directs that special emphasis should be placed on resources that are rare or unique to the region.

As reported in Appendix B.1, the potential for special-status plant species to occur within the Project Site included a review of databases provided by CNPS and CDFW. These databases

were also reviewed for the Spring Survey conducted by Envicom, and include the CNPS Online Inventory of Rare and Endangered Plants<sup>11</sup> and the CDFW California Natural Diversity Data Base (CNDDDB) Rarefind 5 application for sensitive “elements”.<sup>12</sup> The review of these databases included the Oat Mountain quadrangle, within which the Project is located, and eight adjacent quadrangles, namely Val Verde, Newhall, Mint Canyon, Santa Susana, San Fernando, Calabasas, Canoga Park, and Van Nuys. The CNDDDB/CNPS derived lists are provided in Appendix B.1 and Appendix B.2. Based upon these databases, 51 special-status vascular plant species have been documented within the nine USGS quadrangles reviewed. The analysis of the potential for occurrence of special-status plants is presented in Appendix B.1, including growth form, blooming period, protection status, primary habitat associations, and an evaluation of their potential for occurrence at the site.

The evaluation considers the potential for occurrence within the biological survey area, i.e., within the development footprint and vicinity. Most special-status plant species known to occur in the region are precluded from occurring at the site due to lack of suitable habitat or because the site is outside of the known range of the species.

This evaluation of potential impacts to special-status plants considers those species that require mandatory special consideration and/or protection pursuant to the Federal Endangered Species Act, the State Endangered Species Act, and/or CEQA, are protected by local policy, or if they meet criteria to be locally significant. Lists of vascular plants and animals observed during the surveys are provided in Appendix B.1 and Appendix B.2. No special-status plant species listed as rare, threatened, or endangered that would require a mandatory finding of significance pursuant to CEQA 15380, or that are considered locally significant, were found during the biological survey.

Additionally, a survey for rare plants was conducted during the peak spring blooming period in May 2020 for special-status plant species with potential to occur. No special-status plant species were observed during the surveys of the site, and no sensitive plant communities were observed. As the Project would not result in significant project-level impacts to special-status plant species, impacts to special-status plants are less than significant.

### **Special-Status Wildlife Species**

For the purposes of this assessment, special-status wildlife species are those species that are listed, proposed for listing, or that meet the criteria for listing as endangered, threatened, or rare under the FESA or CESA; and those that are listed on the CDFW Special Animals list with a designation of SSC (California Species of Special Concern) or CFP (California Fully Protected). Special-status wildlife species also include species considered to be Locally Sensitive by the County of Los Angeles. The status codes for special-status wildlife are described in Appendix B. CEQA Guidelines, Section 15125(a), also directs that special emphasis should be placed on resources that are rare or unique to the region.

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<sup>11</sup> California Native Plant Society, Rare Plant Program, Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39), Accessed at <http://www.rareplants.cnps.org> on June 18, 2020.

<sup>12</sup> California Department of Fish and Wildlife, California Natural Diversity Database (CNDDDB) – Commercial Version - Dated May, 31 2020 - Biogeographic Data Branch, Accessed on June 18, 2020 at <https://map.dfg.ca.gov/rarefind/view/RareFind.aspx>.

No special-status wildlife species were observed during the survey. Special-status species of land dwelling animals that could potentially occur within the site include the coastal whiptail, California glossy snake, San Diego mountain kingsnake, coast patch-nosed snake, and coast horned lizard. Two (2) bird species have a moderate or high potential to occur while foraging within the sagebrush, and grassland habitats within the study area, including southern California rufous-crowned sparrow, and white-tailed kite, and therefore could occur temporarily at the Project site. The rufous-crowned sparrow is included on CDFW's Watchlist and is fairly common throughout its range. The white-tailed kite is a CDFW fully protected species that is uncommon but is known to forage over grassland habitat consistent with areas downslope of the study area. These species as well as several species of special-status bats have a low probability to forage over the Project site, but would not roost in the area. The potential for occurrence of many of these species is primarily due to the presence of suitable habitats adjacent to or in the vicinity of the site, rather than the quality or suitability of the habitat at the water tank site itself. The habitats within the impact area are not of particular importance to the survival or life cycle of any of the above-mentioned special-status species, such that the temporary loss of the habitat would have a significantly adverse effect on a population of the species. All of these species would be capable of escaping harm during grading or other Project activities within the relatively small Project site, if present, although some of the terrestrial species are slow moving and could be harmed during Project construction. Due to the small size of the area to be graded, only a very small number of individuals of any slow moving species would potentially be affected during construction, and therefore, the population of the species would not be significantly reduced. None of the species that could potentially be harmed by the Project are listed under the Federal or State Endangered Species Acts. The Project impacts to special-status species would be less than significant, due to their low probability of occurrence and/or their capability of escaping from harm, the very small number of individuals that could potentially be affected, and because the habitats at the site are not of particular importance to their survival or life cycle. As the Project would not result in significant project-level impacts to special-status wildlife species, impacts to special-status wildlife are less than significant.

Although the project's permanent removal of less than 0.03 acre of vegetation beyond the existing pavement area would not result in a significant impact regarding special-status species pursuant to CEQA Guidelines Section 15065, in consideration of comments provided by CDFW, the LVMWD will impose the following conditions on the project:

**Pre-Construction Survey Condition**

Prior to commencement of ground or vegetation disturbing activities at the project site, a qualified biologist shall conduct two surveys for special-status wildlife species. The first survey shall be conducted no more than fourteen (14) days prior to commencement of project activities and the second survey shall be conducted no more than three (3) days prior to the commencement of project activities. The survey shall incorporate methods to detect the special-status wildlife species that could potentially occur at the site. To the extent feasible, special-status species shall be avoided. If avoidance is not feasible, the species shall be captured and transferred to an appropriate habitat and location where it would not be harmed by project activities. Should a State or federally listed species be found, activities shall be postponed until the Applicant consults with the CDFW and/or USFWS, and obtains any necessary take authorization or permit approvals. The biologist shall hold the requisite permits for the capture and handling of the species. If a special-

status wildlife species is found during the surveys, the biologist shall monitor all ground and vegetation disturbing activities at the project site throughout site preparation activities.

### **Tree Removal Condition**

Any tree removal shall occur following a pre-construction survey by a qualified biologist to determine whether bats are present in the tree to be removed. Felling the tree will be accomplished by using heavy equipment to nudge the trees 2 or 3 times to activate any bats that may be occupying the trees so that they have an opportunity to leave, then notching trunks by chainsaw to ensure trees will not fall into the existing water tank, before pushing over or pulling down the trees using heavy equipment with chains, ropes, or similar method.

### **Nesting Birds**

Grading and construction if conducted during the nesting bird season (February 1 to August 31) would have the potential to result in disturbance of active bird nests within or in close proximity of the Project site, either directly or indirectly due to increased human activity or construction noise. The potential loss of bird nests, eggs, and young due to Project activities would be in violation of one or more of California Fish and Game Code sections 3503 (any bird nest), 3503.5 (birds-of-prey), or 3511 (Fully Protected birds). In addition, the purposeful removal or destruction of one or more active nests of any other birds listed by the federal Migratory Bird Treaty Act of 1918 (MBTA), whether nest damage was due to vegetation removal or to other construction activities, would be considered a violation of the MBTA. Implementation of MM **BIO-1**, which requires standard pre-construction surveys would reduce potentially significant impacts to a less than significant level.

### **Mitigation Measures**

**BIO-1:** Project activities, including but not limited to site preparation, construction, or fuel modification activities, with potential to disturb suitable bird-nesting habitat shall be prohibited within the breeding/nesting season for native bird species (February 15 through August 31) and raptors (January 1 through August 31). If Project activities cannot feasibly avoid the breeding bird season, thirty days prior to the disturbance of suitable nesting habitat, the applicant shall arrange for weekly bird surveys to detect any protected native birds in the habitat to be removed and ~~any other such habitat within properties adjacent to the Project~~ potential roosting or perch sites within 500-feet of the construction site, as access to adjacent areas allows. A qualified biologist with experience in conducting breeding bird surveys shall conduct the surveys. The surveys shall continue on a weekly basis with the last survey being conducted no more than three (3) days prior to the initiation of clearance/construction work. If Project activities are delayed or suspended for more than 7 days during the breeding season, additional surveys shall be conducted.

The field surveys shall determine if active nests of any bird species protected by the state or federal Endangered Species Acts, Migratory Bird Treaty Act, and/or the California Fish and Game Code Sections 3503, 3503.5, or 3511 are present at the limits of disturbance or within 500 feet of the limits of disturbance. The findings

of these surveys shall be reported to the lead agency prior to initiation of vegetation clearance.

If active nests are identified during pre-construction surveys or discovered after construction has started, they will be protected with spatial buffers. Buffer size will be determined on a case-by-case basis by a qualified biologist based on site conditions, the species' life history and disturbance tolerance, the nest's distance to construction activities, and the type of construction ongoing in the vicinity of the nest. Buffers will be clearly delineated (e.g., using rope, flagging, signage); or they may also be defined by natural or man-made features that are deemed sufficient to prohibit access (e.g., tree rows, fences). Buffers will remain in place and will be monitored and maintained regularly during the nesting season or until the biologist determines that the young have fledged or the nest failed or construction has been completed. A final report of nest monitoring will be provided to the lead agency upon conclusion of grading activities.

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

***Less Than Significant Impact.*** The majority of the area impacted consists of highly disturbed terrain dominated by common chaparral and coastal sage scrub communities, non-native grassland, and barren or sparsely vegetated areas. There are no sensitive plant communities or riparian habitats within the Project limits. A review of the CDFW CNDDDB indicated that seven (7) Sensitive Plant Communities/Habitats have been observed within the Oat Mountain Quadrangle and/or the eight surrounding quadrangles. These Sensitive Plant Communities/Habitats include:

- California Walnut Woodland;
- Southern Coast Live Oak Riparian Forest;
- Southern Cottonwood Willow Riparian Forest;
- Southern Mixed Riparian Forest;
- Southern Sycamore Alder Riparian Woodland;
- Southern Willow Scrub; and
- Valley Oak Woodland.

These communities were not observed within the survey area. No CDFW rare or sensitive plant communities occur within the survey area. The observed plant communities within the survey area are as follows:

- Coast Live Oak Woodland;
- California Sagebrush Scrub;
- Laurel Sumac Scrub;
- Chamise Scrub;
- California Sagebrush- Laurel Sumac Scrub;
- Non-Native Grasses; and
- Developed/Barren or Sparsely Vegetated Areas.

Due to their non-native, managed, and disturbed condition, the plant communities within the Project limits are not sensitive and Project impacts to plant communities would be less than significant.

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

**No Impact.** According to the USFWS National Wetlands Mapper, no natural wetlands are located within the Project site.<sup>13</sup> Based on the field survey conducted November 11, 2018, there are no streambeds or riparian habitat within the Project limits. The water tank site is located on top of a hill and is currently developed with two existing water tanks and a paved driveway. Therefore, there would be no impact to federally protected wetlands (including marshes, vernal pools, and coastal wetlands) or waters of the United States.

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

**Less Than Significant Impact.** The water tank site is currently developed by two existing water tanks and a paved driveway on top of a hillside. The water tank site does not contain a native wildlife nursery site or wildlife corridor.<sup>14</sup> In addition, due to the relatively small size of the water tank site, the Project would not represent a barrier to movement for dispersal of fauna over the short or long-term. Therefore, the Project would have no impact to wildlife movement.

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

**Less Than Significant with Mitigation Incorporated.** No ordinance-sized oak trees were located within the survey area. However, the oak trees that occur within the proposed staging area are of sufficient size to qualify for protected status. Encroachment into the Protected Zone of any protected oak tree would require an Oak Tree Permit from the County of Los Angeles. In order to prevent impacts to protected oak trees within the proposed staging area, and to avoid the need for an Oak Tree Permit, the Protected Zone (PZ) of the trees in the proposed staging area would need to be fenced off. The Protected Zone is defined as the area within the dripline (canopy) and extending a minimum of five (5) feet outside the dripline or 15 feet from the trunk of a tree; whichever is greater.<sup>15</sup> The Oak Tree Protection Measures would prevent potential impacts to coast live oak trees of ordinance size located within the proposed staging area, and with implementation of MM **BIO-2**, impacts would be less than significant.

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<sup>13</sup> United States Fish and Wildlife Service, National Wetlands Inventory, Wetlands Mapper, Accessed on November 5, 2019 at: <https://www.fws.gov/wetlands/data/mapper.html>.

<sup>14</sup> South Coast Wildlands, South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion.

<sup>15</sup> Los Angeles County Oak Tree Ordinance Section 22.56.2060, subsection C.

**Mitigation Measures**

**BIO-2: Oak Tree Protection Measures.**

- The installation of chain link fencing not less than four feet in height around the protected zone of oak trees within the proposed staging area. Said fencing shall remain in place throughout the entire period of development. The protected zone in the case of the specific trees within the proposed staging area is 5 feet from the extent of the tree canopy in all directions.
- No construction materials are to be stored or discarded within the Protection Zone of any oak. Rinse water, concrete residue, liquid contaminants (paint, thinners, gasoline, oils, etc.) of any type shall not be deposited in any form at the base of an oak.
- No vehicles shall be parked within the Protection Zone of an oak.

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

***No Impact.*** The Project site is not located within a Habitat Conservation Plan, Natural Community Conservation Plan, or other such plan. The site is not located within a Significant Ecological Area (SEA).<sup>16</sup> The water tank site is currently developed by two existing water tanks and a paved driveway on top of a hillside. Therefore, the Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan and would have no impact.

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<sup>16</sup> Los Angeles County Department of Regional Planning, General Plan Figure 9.3: Significant Ecological Areas and Coastal Resource Areas Policy Map, Adopted October 6, 2015.

## 5.5 CULTURAL RESOURCES

This section is based on a Phase I Cultural Resource Assessment letter report (Cultural Report) prepared by Envicom Corporation on October 18, 2019, provided in **Appendix C**. As the Pump Station upgrades would occur within the confines of the existing Pump Station, which is fenced, and primarily paved or barren ground, that component of the Project would have no impact on cultural resources, and therefore, this analysis will focus on the undeveloped water tank site.

### a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

**Less Than Significant Impact.** The County's General Plan Historic Resources Sites Policy Map<sup>17</sup> does not identify any mapped historic or cultural resource sites in the Project site vicinity. The Cultural Report prepared for the Project included a record search conducted at the South Central Coastal Information Center (SCCIC) on October 2, 2019 to identify any recorded cultural resources within the subject property as well as a 0.25-mile radius surrounding the water tank site. The SCCIC records did not identify any historical built environment resources within the Project site or study area.

According to historical USGS maps of the Project site vicinity (Oat Mountain Quadrangle) that were reviewed in preparation of the Project's Cultural Report, a water tank was mapped in a location consistent with that currently occupied by the smaller existing tank (Twin Lakes Tank 1) by 1969. The larger of the two existing tanks (Twin Lakes Tank 2), which would be retained by the Project, was likely constructed during the 1980's. Satellite images of the area provided by Google Earth indicate no substantial changes in the development of the water tank site have occurred from 1994 to the present.

As such, the Project's potential impacts to historic resources of the built environment would be less than significant.

#### **Mitigation Measures**

No mitigation measures would be required.

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

**Less Than Significant with Mitigation Incorporated.** As stated above, the Cultural Report included a SCCIC record search of the subject property plus a 0.25-mile radius surrounding the water tank site. The results of the SCCIC record search was positive for a previously identified cultural resource located within the Project development footprint, CA-LAN-881, five resources within the study area and three previously completed cultural resource reports. Although the result of the SCCIC record search was positive for cultural resources within the Project development footprint, CA-LAN-881, was determined by archeologists to have been severely impacted, then destroyed by water tank and access road development in the area. In addition,

<sup>17</sup> Los Angeles County Department of Regional Planning, General Plan 2015, Adopted October 6, 2015. Figure 9.9



the Native American Heritage Commission (NAHC) was contacted on October 3, 2019, requesting a records search and yielded negative results. The pedestrian survey was also negative for cultural resources within the Project development footprint.

The Cultural Report concluded that although CA-LAN-881 no longer exists and the NAHC and pedestrian survey yielded negative results, the existence of previous cultural resources in the Project development footprint and location within a region that is sensitive for older historic cultural resources, the site should be monitored for cultural resource during initial grading. Mitigation measure CUL-1, below, would reduce the potential for the Project to adversely affect archaeological cultural resources, if discovered on the site, to less than significant.

### **Mitigation Measures**

**CUL-1:** Prior to any ground-disturbing activities, the lead agency shall retain a qualified archaeologist that meets the Secretary of Interior qualifications and a Native American monitor with cultural affiliation with the vicinity according to the Native American Heritage Commission. Both monitors shall be at the water tank site during grading or ground disturbance of the top five feet of soil, or until bedrock is encountered. In the event a cultural resource and/or tribal cultural resource is discovered, the archaeological monitor will collect any important prehistoric or older historic (pre-1950s) cultural material that may be uncovered by these activities.

If potentially significant archaeological materials are discovered within an undisturbed context during the Project's earth-moving activities, the archaeological monitor shall stop work within a 50-foot radius, and crews and equipment shall be diverted away from the discovery until the nature and/or significance of the find(s) has been evaluated. If, upon assessment by a qualified archaeologist, the find is not determined to be significant, then construction may resume. If the find is determined to be potentially significant, then the lead agency will be immediately notified of the discovery.

Construction will not resume in the locality of the discovery until consultation between the Project archaeologist, the Project manager, the lead agency, and the Applicant's representative takes place and a conclusion approved by the lead agency is reached. Should pre-contact cultural resources be discovered, the lead agency, Project archaeologist, and Project Applicant shall consult with the Fernandeano Tataviam Band of Mission Indians (FTBMI) regarding the appropriate treatment and disposition of the discovered resources. Should any discovered significant resource and/or tribal cultural resource not be a candidate for avoidance or preservation in place, a research design shall be developed by the archeologist prior to further survey work, evaluation tasks, or data recovery of the significant resource.

A final report of archaeological monitoring shall be provided to the lead agency and disseminated to consulting Tribes under AB52, upon conclusion of grading activities. Any artifacts found through monitoring, or which have been collected in response to a "discovery" situation, shall be returned to the Project property after

the completion of any basic cataloging and recordation, and reburied in a location that shall be as hidden as possible from the public. The location for reburial of any artifacts within the site will be determined in consultation between the FTBMI and the lead agency and the reburial shall be conducted with a representative from the FTBMI present. The location of the reburial will be described to any qualified Native American Tribal Group representative upon request.

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

***Less Than Significant Impact.*** There is no indication in the record that human remains may be buried on the site. However, the State of California Health and Safety Code Section 7050.5 provides regulations of actions to be taken if any project were to result in the inadvertent discovery of human remains during ground disturbances. This code section states that in the event human remains are uncovered, no further disturbance shall occur until the County Coroner has made a determination as to the origin and disposition of the remains pursuant to PRC Section 5097.98. The Coroner must be notified of the find immediately, together with the City and the property owner. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials and an appropriate reinterment site. The lead agency and a qualified archaeologist shall also establish additional appropriate mitigation measures for further site development, which may include additional archaeological and Native American monitoring or subsurface testing. Therefore, the Project would be required by law to comply with the existing regulations to ensure potential impacts would be less than significant.

## 5.6 ENERGY

The following analysis is primarily based on CalEEMod.2016.3.2 output sheets dated January 14, 2020, provided in Appendix B.

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

*Less Than Significant Impact.*

### Construction

During construction, the Project would use heavy-duty equipment associated with demolition and removal of the existing smaller water tank, site preparation, grading, paving, architectural coating and installation/assembly of the new water tank. Construction equipment used on the site would include graders, dozers, air compressors, cranes, forklifts, generators, welders, rollers, pavers, and tractors/loaders/backhoes. Construction activities would also involve off-site use of trucks for material and supplies delivery, and grading activities would require export of approximately 3,000 cubic yards of soil/rock material, which would be hauled approximately fifty miles to a disposal facility at Irwindale, California. The majority of the construction equipment would likely be diesel-fueled.

The California Code of Regulations (CCR), requires drivers of diesel-fueled commercial motor vehicles with gross vehicle weight ratings greater than 10,000 pounds not to idle the vehicle's primary diesel engine longer than five minutes at any location.<sup>18</sup> Compliance with this regulation would also result in efficient use of construction-related energy and prevent unnecessary consumption of energy from diesel fuel.

According to carbon dioxide (CO<sub>2</sub>) emission factors for transportation fuels published by the U.S. Energy Information Administration, burning one gallon of diesel fuel generates approximately 22.4 pounds of CO<sub>2</sub> and burning one gallon of petroleum-based gasoline produces approximately 19.6 pounds of CO<sub>2</sub>.<sup>19</sup> Based on these emissions factors and the Project's total construction-related CO<sub>2</sub> emissions, Project consumption of diesel and petroleum-based gasoline during construction was calculated and shown in **Table 5.6-1, Total Fuel Consumption During Project Construction**. The calculations are shown in a Construction Fuel Consumption Worksheet provided in Appendix A following the CalEEMod output sheets.

**Table 5.6-1  
Total Fuel Consumption During Project Construction**

Energy Type	Total MT CO <sub>2</sub>	Total CO <sub>2</sub> pounds <sup>a</sup>	CO <sub>2</sub> emission factors	Total Gallons Consumed
Total Diesel	146.61	323,220	22.4	<b>14,429</b>
Total Gasoline	1.9	4,255	19.6	<b>217</b>

Source: Twin Lakes Water Tank Replacement Construction Fuel Consumption Worksheet. Appendix A.

<sup>a</sup> 1 MT = 2,204.62 lbs. (approx.)

<sup>18</sup> California Code of Regulations, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.

<sup>19</sup> U.S. Energy Information Administration, Environment Carbon Dioxide Emissions Coefficients, February 2, 2016.

As shown in Table 5.6-1, based on the U.S. Energy Information Administration fuel consumption factors, and the Project's estimated "total CO<sub>2</sub>" emissions presented in the CalEEMod output sheets, it is estimated that the Project's construction activities would consume a total of approximately 14,429 gallons of diesel fuel and approximately 217 gallons of gasoline. In 2015, 15.1 billion gallons of gasoline were sold in California,<sup>20</sup> and 4.2 billion gallons of diesel, including off-road diesel, was sold in California.<sup>21</sup> As such, the use of construction equipment, transportation of materials, and workers necessary for Project construction would not represent a substantial proportion of annual gasoline or diesel fuel use in California.

Adherence to CCR Section 2485 and California Air Resources Board anti-idling regulations for off-road diesel-fueled fleets would reduce the potential for wasteful use of energy by construction equipment. Additionally, the Project would be able to dispose of soil export within the nearby Deerlake Ranch residential development currently being constructed, which would minimize hauling distances and associated fuel consumption. Due to the temporary duration of construction activities, and that fuel consumption is inherently necessary in construction projects, fuel consumption would not be excessive or substantial with respect to fuel supplies. The energy demands associated with fuel consumption during construction would be typical of projects of this size and would not necessitate additional energy facilities or distribution infrastructure or cause wasteful, inefficient or unnecessary consumption of energy. Therefore, Project construction would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, impacts would be less than significant.

### **Operation**

During operations, the new water tank and pump station upgrades would operate similarly to the existing tank to be removed and the existing pump station equipment. Therefore, operational energy consumption would not substantially differ from the existing conditions. The new tank and pump station upgrades have been designed to provide adequate service to the residential development for which it is intended only, and therefore, would not result in wasteful, inefficient, or unnecessary consumption of energy resources during operations, and impacts would be less than significant.

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

***Less Than Significant Impact.*** The Project would replace an existing water storage tank with a larger water tank, and upgrade an existing pump station with additional pumps and associated equipment to provide adequate water supplies to a residential development currently under construction. The Project has been designed with capacity to meet the needs of the new development for which it is intended while maintaining adequate service to existing uses in the vicinity only, and would not directly or indirectly induce additional growth exceeding applicable projections in state or local plans for renewable energy or energy efficiency. As such, potential impacts would be less than significant.

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<sup>20</sup> California Energy Commission, California Gasoline Data, Facts, and Statistics, Accessed September 17, 2019 at: [https://ww2.energy.ca.gov/almanac/transportation\\_data/gasoline/](https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/).

<sup>21</sup> California Energy Commission, Diesel Fuel Data, Facts, and Statistics, Accessed September 17, 2019 at: [https://ww2.energy.ca.gov/almanac/transportation\\_data/diesel.html](https://ww2.energy.ca.gov/almanac/transportation_data/diesel.html).

## 5.7 GEOLOGY AND SOILS

As the Pump Station upgrades would occur within the confines of the existing Pump Station, which is fenced, and primarily paved or barren ground, and is approximately 0.25 miles distant from the nearest residence, that component of the Project would have no impact to people or structures associated with potential instability of geologic conditions, and therefore, this analysis will focus on the undeveloped water tank site.

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

**i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?**

***Less Than Significant Impact.*** The Project water tank site is not located within an Earthquake Fault Zone or Alquist-Priolo Earthquake Fault Zone.<sup>22</sup> The site is located within seismically active southern California, meaning moderate to strong ground motions resulting from future regional earthquakes could occur during the life of the Project. However, the Project does not propose habitable structures, and therefore, impacts that may result from rupture of a known earthquake fault are considered less than significant.

**ii) Strong seismic ground shaking?**

***Less Than Significant Impact.*** As with much of southern California, the Project site lies in a seismically active region that is prone to occasional earthquakes. Major faults in this region of Southern California include the San Andreas, Simi, San Fernando, Verdugo, and San Gabriel faults. While a certain level of exposure to seismic ground shaking is expected in seismically active southern California, the Project does not propose habitable structures, therefore, the Project would have a less than significant impact regarding the exposure of people or structures to potential substantial adverse effects related to strong seismic ground shaking. In addition, the proposed water tank would consist of a welded steel tank constructed pursuant to current American Water Works Association (AWWA) standards D100-05, updated in 2006, for welded steel tank construction and all other applicable codes for the type of structure, including adequate structural design. Therefore, impacts that may result from seismic ground shaking are considered less than significant.

**iii) Seismic-related ground failure, including liquefaction?**

***Less Than Significant Impact.*** Liquefaction is a seismic phenomenon where saturated soils, generally in the upper 50 feet of the subsurface profile, lose strength when severely shaken and develop excess pore pressures. The water tank site is not located within an area susceptible to seismically induced liquefaction according to the California Geological

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<sup>22</sup> California Geological Survey, Earthquake Zones of Required Investigation Oat Mountain Quadrangle, February 1, 1998.

Survey Seismic Hazard Zones Map for the Oat Mountain Quadrangle.<sup>23</sup> Additionally, the proposed Project would not be occupied on a regular basis by employees, and the water tank would be constructed to specified safety standards as discussed above in Section 5.6.a. Therefore, impacts pertaining to liquefaction would be less than significant.

#### iv) Landslides

**Less Than Significant Impact.** Landslide hazard areas are generally considered to exist when substantial slopes are located on or immediately adjacent to a property. The California Public Resources Code defines an earthquake-induced landslide area as an area where previous occurrence of landslide movement, or local topographic, geologic, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation would be required.

The water tank site is located on a ridgeline that is mapped as susceptible to earthquake-induced landslides as shown on the California Geological Survey Seismic Hazard Zones Map for the Oat Mountain Quadrangle.<sup>24</sup> The water tank site grading and paving would create a compacted pad for stability of earth materials on which to construct the water tank. Additionally, as no residents or employees would occupy the site on a regular basis, and no development would occur at the base of either of these slopes, the Project's potential to expose people or structures to potential substantial adverse effects from landslides would be less than significant.

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

**Less Than Significant Impact.** During grading, the Project would be required to implement best management practices (BMPs) to minimize potential erosion of exposed soils due to stormwater runoff. Standard BMPs may include use of sandbags, silt fences, and/or fiber rolls on sloped surfaces and the site perimeter. The water tank site grading and paving would create a compacted pad for stability of earth materials on which to construct the water tank. Stormwater runoff from the water tank site would be conveyed via the paved access road and the existing onsite storm drain as occurs under existing conditions. Therefore, impacts would be less than significant.

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

**Less Than Significant Impact.** As evaluated above in Section 5.6.a, the potential for soil instability impacts due to liquefaction or landslide would be less than significant. The proposed water tank would be constructed on a graded and paved pad and would be consistent with current standards and codes. The proposed water tank would consist of a welded steel tank constructed to current AWWA standards D100-05, updated 2006, for welded steel tank construction and all

<sup>23</sup> California Geological Survey, Earthquake Zones of Required Investigation Oat Mountain Quadrangle, February 1, 1998.

<sup>24</sup> California Geological Survey, Earthquake Zones of Required Investigation Oat Mountain Quadrangle, February 1, 1998.

other applicable codes for the type of structure, including adequate structural design. Therefore, impacts would be less than significant.

**d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks of life or property?**

**Less Than Significant Impact.** Expansive soils contain clay particles that change in volume (shrink or swell) due to a change in the soil moisture content, and structure foundations placed on expansive soils could potentially result in foundation damage and erosion. The Twin Lakes water tank is currently occupied by two water tanks, one of which would be replaced. The Project would not create habitable structures, and no residents or employees would occupy the site on a regular basis. According to the Geologic and Geotechnical Engineering Report (Geotechnical Report) prepared for the Project,<sup>25</sup> the Chatsworth Formation bedrock underlies the Site, and the soil material at the Project Site has a low to medium expansion index range. Conventional foundation criteria are recommended by the Geotechnical Report for design purposes. Soil preparation of a graded pad for the replacement tank would be required to be overseen by a qualified engineer to ensure soil preparation recommendations of the Geotechnical report are followed. As such, the potential for the Project to result in creating a substantial risk of life or property due to expansive soil conditions would be less than significant.

**e) Would the project 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?**

**No Impact.** No septic tanks or wastewater disposal systems are proposed. No impact would occur.

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

**Less Than Significant with Mitigation Incorporated.** The Phase I Cultural Resource Assessment letter report (Cultural Report) was prepared by Envicom Corporation on October 18, 2019 and is provided in **Appendix C**. As the Pump Station upgrades would occur within the confines of the existing Pump Station, which is fenced, and primarily paved or barren ground, that component of the Project would have no impact on paleontological resources or a unique geologic feature, and therefore, this analysis will focus on the undeveloped water tank site.

According to the Dibblee Geological map for the area (Oat Mountain), the Twin Lakes Water Tank site is within the Chatsworth sandstone formation, which dates to the Cretaceous period approximately 145 million years ago to 66 million years ago and represents a marine environment of that time. Fossils present include mostly marine shells and invertebrates, with rare examples of shark teeth and fish vertebrae. Though not common, important fossils can be uncovered within this formation. The Cultural Report concluded that if bedrock is uncovered during construction activities, then the Project site should be spot-checked daily by a paleontological monitor.

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<sup>25</sup> GeoSoils Consultants Inc., Geologic and Geotechnical Engineering Report Proposed LVMWD Twin Lakes Tank No. 1, Replacement, Revised July 6, 2020.

Mitigation measure PAL-1, below, would reduce the potential for the Project to adversely affect paleontological cultural resources, if discovered on the site, to less than significant.

**Mitigation Measures**

**PAL-1:** During rough grading activities for the water tank site that may encounter bedrock, a qualified paleontological monitor, approved by the lead agency, shall spot check grading operations once daily to determine if fossil-bearing bedrock is being encountered. If the paleontological monitor observes fossils or fossil-bearing bedrock, full-time monitoring of grading activities shall begin immediately for the duration of the rough grading.

Small fossil materials observed by the monitor during grading may be collected by hand if safe to do so. If significant fossils are encountered, the monitor shall have the ability to halt construction within the area the discovery, and divert construction activities to a distance of 50-feet until the lead agency is notified of the discovery and a qualified senior paleontologist can evaluate the nature and/or significance of the find(s).

Construction shall not resume in the locality of the discovery until consultation between the consulting paleontologist, the Project manager, and the lead agency takes place and a conclusion is reached and approved by the lead agency regarding the significance and prescribed treatment of the resource. If the fossil find is determined to be significant enough to warrant further evaluation and/or extraction, then additional evaluation or fossil recovery tasks may be required. Such tasks would be led by a qualified paleontologist at the direction of the lead agency, if the resource cannot be avoided.

A final Monitoring Report will be produced by the paleontological monitor that discusses all monitoring activities and any fossils recovered through monitoring, to be presented to the lead agency for the Project record. All evaluation, fossil recovery, or monitoring reports that are generated as a response to the discovery of a significant paleontological resource shall be submitted to the Natural History Museum of Los Angeles County as part of the Project record.



## 5.8. GREENHOUSE GAS EMISSIONS

Certain gases emitted by human activity have been implicated in global climate change, and are commonly referred to as GHG due to their role in trapping heat near the surface of the earth. For purposes of planning and regulation, Section 15364.5 of the California Code of Regulations defines GHGs to include carbon dioxide (CO<sub>2</sub>), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. These gases have varying potentials for trapping heat in the atmosphere, so for analysis of impacts, these emissions are reported as a cumulative amount of all of these regulated gases, modified by the proportional heat trapping potential of each one relative to that of CO<sub>2</sub>. The resulting amount is reported as a carbon dioxide equivalent, or CO<sub>2</sub>e. This analysis is partly based on the CalEEMod.2016.3.2 modeling calculations of potential GHG emissions, expressed as CO<sub>2</sub>e, provided in Appendix A.

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

**Less Than Significant Impact.** California has passed several bills regarding GHG regulations, including Assembly Bill (AB) 32. A major component of AB 32 related to development such as the proposed Project is a mandate that California's GHG emissions be reduced to 1990 levels by 2020. Section 15064.4 of the California Code of Regulations specifies a process for evaluating the significance of GHG emissions by quantifying a project's emissions, determining if they are significant, and specifying mitigation if impacts are found to be potentially significant. At each of these steps, the guidelines afford the lead agency substantial flexibility.

The SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold on December 5, 2008 of 10,000 Metric Tons (MT) CO<sub>2</sub>e per year for industrial projects where the SCAQMD is the lead agency (e.g., stationary source permit projects, rules, plans, etc.). In September 2010, SCAQMD provided revisions that recommended a threshold of 3,500 MT CO<sub>2</sub>e per year for residential/commercial projects. Although the Project's proposed water tank and pump station upgrades do not represent a residential or commercial project, they would be implemented to serve a new residential development, and therefore, the recommended 3,500 MT annual emissions threshold for residential/commercial projects has been used as a significance guideline for this analysis.

### **Construction Activity GHG Emissions**

The CalEEMod air quality computer model (discussed in Section 5.3, Air Quality), estimated that construction activities for the water tank Project, including grading, hauling, assembly of the tank, paving, and painting, would occur over approximately 125 days, and generate a total of 149.2 MT CO<sub>2</sub>e emissions. SCAQMD GHG emissions policy for evaluating impacts from construction activities is to amortize emissions over a 30-year lifetime, which yields an amortized level of approximately 5.0 MT CO<sub>2</sub>e emissions per year for build-out of this Project, an impact well below the 3,500 MT annual emissions significance threshold noted above.

No grading would occur for the proposed upgrades to the existing Pump Station. Therefore, GHG emissions associated with installation of the proposed new equipment at the existing Pump Station would be less than significant.

### **Operational GHG Emissions**

The proposed Project components would not include onsite staff (except for periodic maintenance), therefore GHG emissions from mobile sources (e.g., worker vehicles) would be minimal and would not exceed significance thresholds. Daily operations of the storage tank would consist of storing potable water received from the pumping station, as occurs under existing conditions for the existing tank to be removed.

The Project would install and operate additional pumping capacity by installing three new pumps, and associated electrical equipment at an existing pumping station where six such pumps currently operate. The new pumps would be powered by electricity, as are the existing pumps on the site. A 500 kW emergency standby generator would be installed at the Pump Station, which would be diesel powered. The standby generator would be scheduled to run for approximately 30 minutes once weekly for maintenance purposes. Beyond scheduled maintenance operations, the frequency and duration of generator use during electrical outages cannot be determined. As seen in Appendix A, operations of the Project's pump station upgrades would generate GHG emissions of approximately 37.8 MT CO<sub>2e</sub> annually. Adding the amortized construction GHG emissions of 5.0 MT CO<sub>2e</sub>, the Project's annual GHG emissions would be approximately 42.8 MT CO<sub>2e</sub>.

As the replacement of an existing water tank with a new water tank, and minor upgrades to an existing pumping station would not substantially alter the operations and functions of the subject facilities from existing conditions, as demonstrated by the relatively minor estimated emissions from long-term operations, and as GHG emissions that would result from construction and operations of the proposed Project would be far below any numerical threshold either adopted or proposed by SCAQMD, the potential for the Project to result in a considerable increase in GHG emissions over existing conditions would be less than significant.

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

***Less Than Significant Impact.*** Operations of the Project would not generate daily vehicle travel, or otherwise generate substantial long-term operational GHG emissions, and would not induce additional growth. Growth projection forecasts are inherently used in local, regional, and State plans for reducing GHG emissions, such as the Los Angeles County Community Climate Action Plan 2020 (CCAP),<sup>26</sup> the Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS),<sup>27</sup> or the California Air Resources Board (CARB) 2017 Climate Change Scoping Plan.<sup>28</sup> These plans rely on growth projections in order to determine future GHG inventories and thus reduction strategies or policies associated with future development. This Project supports a previously approved development that was subject to CEQA review and is currently under construction.

<sup>26</sup> County of Los Angeles, Department of Regional Planning, Final Unincorporated Los Angeles County Community Climate Action Plan 2020, August 2015

<sup>27</sup> Southern California Association of Governments, 2016 Regional Transportation Plan/Sustainable Communities Strategy, Adopted April 2016.

<sup>28</sup> California Air Resources Board, California's 2017 Climate Change Scoping Plan, November 2017.

The proposed water tank replacement has been designed to meet the additional water supply needs of a new residential development and so would not induce growth beyond that which was already approved and is under construction. Local and regional plans assume incidental infrastructure such as water lines, tanks and pump stations are included with such growth. Therefore, the Project would not be in conflict with such planning documents. Further, policies of such plans typically focus on transportation and transit, land use and planning, energy efficient buildings, and water conservation as well as solid waste disposal reduction goals, which would not relate to operation of a water tank that would replace an existing tank, or minor upgrades to an existing pump station. As such, the Project's potential to substantially contribute to emissions associated with global climate change environmental impacts over the existing conditions on the Site in conflict with adopted GHG reduction plans, policies or regulations would be less than significant.

## 5.9. HAZARDS AND HAZARDOUS MATERIALS

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

**Less Than Significant Impact.** Construction and operation of both the water tank and Pump Station sites would not involve the routine transport, use, or disposal of hazardous materials in substantial quantities. Relatively small amounts of routine hazardous substances, such as lubricants, fuels, and solvents may be used at each Project site for construction and minimally required routine maintenance. During operations, the proposed emergency standby generator to be installed at the existing Pump Station would require occasional refueling of its internal diesel fuel tank. However, due to the limited quantity and infrequency of such deliveries, potential impacts would be less than significant.

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

**Less Than Significant Impact.** As stated in Section 5.9.a., relatively small amounts of hazardous substances, such as lubricants, fuels, and solvents may be used at each Project site for construction and minimally required routine maintenance. The proposed 500 kW diesel-powered standby generator located at the Pump Station site would be fully contained within its own housing, including the fuel tank, constructed on a concrete pad, and surrounded at the base by at least four feet of paving. In addition to operating during a power outage, the generator would be programmed to run approximately 30 minutes each week for maintenance purposes. The Project would therefore not result in a reasonably foreseeable upset or accident conditions involving the release of hazardous materials to the environment and impacts would be less than significant.

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

**No Impact.** No schools exist within a one-quarter mile of either the Twin Lakes Water Tank site or the Twin Lakes Pump Station. The closest school to the water tank site is Meraj Academy, which is located approximately 0.6 miles away from the Project site. The closest school to the Twin Lakes Pump Station site is Monarch Christian School, which is located approximately 0.6 miles away from the Project site. Therefore, the Project would have no impact associated with emission or handling hazardous materials within one-quarter mile of a school.

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

**No Impact.** A search of the California Environmental Protection Agency's (CalEPA's) Cortese

List Data Resources databases<sup>29</sup> showed that the water tank site and Pump Station site are not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The search involved the following records:

- Department of Toxic Substances Control's (DTSC's) Envirostor Hazardous Waste and Substances Site List;
- State Water Resources Control Board's (SWRCB's) GeoTracker database (for Leaking Underground Storage Tank (LUST) sites, Department of Defense sites, and Cleanup Program sites, as well as GeoTracker irrigated lands, oil and gas production, operating permitted USTs, and Land Disposal sites); and,
- CalEPA's list of solid waste disposal sites; and the SWRCB's list of Cease and Desist Orders and Cleanup and Abatement Orders.
- Information required from the DTSC under Government Code Section 65962.5(a).

Both Project sites are not 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 not create a significant hazard to the public or the environment. Therefore, the Project would have no impact associated with being located on a site that is included on a list of hazardous materials sites.

**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 for people residing or working in the project area?**

**No Impact.** The water tank site and the Pump Station site are not located within 2 miles of a public airport. The closest airport to both Project sites is the Van Nuys Airport, located over seven miles southwest of both Project sites. The airport is owned and operated by the County of Los Angeles. The County of Los Angeles Airport Land Use Commission (ALUC) oversees implementation of the Los Angeles County Airport Land Use Plan (LUP) for each of its airports, including the Van Nuys Airport. The Project site is not located within the runway protection zone or airport influence area of the Van Nuys Airport designated by the LUP.<sup>30</sup> Therefore, the Project would result in no impact associated with airport safety hazards.

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

**No Impact.** The Project is not located directly along a County designated emergency response plan route.<sup>31</sup> The Pump Station is located at the end of an unpaved road and would not be used for an emergency response or evacuation plan. The water tank site is an existing water tank facility at the terminus of an unpaved access road, which is not and would not be used for an emergency response or evacuation plan. No existing or planned roadways would pass through the sites that either Project component could impede. As no daily traffic would be generated by

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<sup>29</sup> California Environmental Protection Agency, Cortese List Data Resources, Accessed on October 31, 2019 at: <https://calepa.ca.gov/sitecleanup/corteselist/>.

<sup>30</sup> Los Angeles County Department of Regional Planning for the Los Angeles County Airport Land Use Commission, Los Angeles County Airport Land Use Plan, Revised December 1, 2004.

<sup>31</sup> Los Angeles County Department of Regional Planning, General Plan Figure 12.6: Disasters Route Map, Adopted October 6, 2015.

either Project component, there would be no impact regarding physical interference with an emergency response or evacuation plan.

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

***Less Than Significant Impact.*** The Project components would not be occupied by personnel that would be subject to harm from wildfires, with the exception of occasional maintenance and inspections. The water Pump Station upgrades would occur within the existing Pump Station that is predominantly paved and would have additional paving added where new equipment would be installed. A minimum four-foot buffer of paving would be provided around the perimeter of the proposed standby generator, and a minimum of three feet of paving would buffer all other Pump Station components. An existing fire hydrant within the Pump Station site would be retained by the Project. The Pump Station upgrades and water tank proposed for the Project would, in addition to serving the needs of future residents of the Deerlake Ranch residential project, provide water storage and maintain pressure for fire hydrants for use by the fire fighters to protect people or structures within that development in the event of wildfire. Therefore, impacts would be less than significant.

## 5.10. HYDROLOGY AND WATER QUALITY

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

***Less Than Significant Impact.*** The proposed Pump Station upgrades would occur within the existing Twin Lakes Pump Station, the majority of which is currently paved. Under existing conditions, stormwater runoff from the Pump Station sheet flows from the site or is drained by an existing storm drain inlet within the site. The Project would expand the existing paving area at the Pump Station site to a total of approximately 400 square feet, on which the additional pump equipment and standby generator would be installed. The additional paving would be an approximately seven percent increase in the existing paved area, which would not be a substantial increase in the amount of impervious surfaces that currently exist on the site. Therefore, stormwater runoff from the Pump Station site would not be substantially altered from existing conditions. As the Project would not substantially alter existing uses of the Pump Station, the proposed Project's Pump Station upgrades would not violate any water quality standards or waste discharge requirements. Therefore, impacts would be less than significant.

Construction of the new water tank would include grading of the existing building pad after removal of the existing 400,000-gallon water tank to reduce the elevation of the existing building pad approximately 6 feet to match the elevation of the existing water tank that will be retained on the site. The Project would be required to implement best management practices (BMPs) to minimize erosion and sedimentation due to runoff from disturbed soils during construction. During operations, stormwater runoff from the water tank site would be conveyed via the paved access road and the existing onsite storm drain as occurs under existing conditions. The proposed water tank would therefore not violate any water quality standards or waste discharge requirements due to the relatively small net increase in impervious surfaces at the existing water tank site, minimal and infrequent access by LVMWD personnel, and the lack of substantial alteration of existing drainages. Therefore, impacts would be less than significant.

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

***Less Than Significant Impact.*** The Project does not propose any habitable uses that would result in groundwater consumption. The Project does propose to construct potable water delivery and storage infrastructure to serve the Deerlake Ranch residential development currently being constructed, and as such would not of itself generate a demand for water supplies. The proposed water pumps would convey water supplies from existing infrastructure, and would not be used for groundwater extraction. The minimal net increase in paving/impervious surfaces at either of the Project site locations would not substantially interfere with groundwater recharge. Therefore, the Project would not cause a substantial lowering of the local groundwater table, and potential impacts would be less than significant.

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

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

**Less Than Significant Impact.** The Project would not substantially alter drainage patterns of the area. Runoff from the Pump Station site would continue to be conveyed from the paved surfaces via sheetflow and an existing drain inlet. Runoff from the water tank site would continue to be conveyed via an existing onsite storm drain. The proposed Project's minimal net increase in impervious surface area would not substantially increase runoff to downstream water bodies. Therefore, this Project would not substantially alter existing onsite drainage patterns that would result in substantial erosion or siltation offsite. Therefore, this impact would be less than significant.

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

**Less Than Significant Impact.** Refer to Section 5.10.c.i. This impact would be less than significant.

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

**Less Than Significant Impact.** Refer to Section 5.10.c.i. This impact would be less than significant.

**iv) Impede or redirect flood flows?**

**Less Than Significant Impact.** Refer to Section 5.10.c.i. This impact would be less than significant.

**d) Would the project risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones?**

**Less Than Significant Impact.** The water tank and Pump Station site are not located within a 100-year floodplain,<sup>32</sup> and are not proximate to the ocean or other large bodies of water associated with a tsunami hazard<sup>33</sup> or potential inundation zone. There are no levee or dam structures located upstream of the Project site locations. The proposed water tank would consist of a welded steel tank constructed to current AWWA standards D100-05, updated in 2006, for welded steel tank construction and all other applicable codes for the type of structure, including adequate structural design to reduce the risk of failure of the tank itself leading to an uncontrolled release of water. The Project's potential to be subject to, or to cause inundation that could risk release of substantial pollutants would be less than significant.

<sup>32</sup> Los Angeles County Department of Regional Planning, General Plan Figure 12.2: Flood Hazards Zone Policy Map, Adopted October 6, 2015.

<sup>33</sup> Los Angeles County Department of Regional Planning, General Plan Figure 12.3: Tsunami Hazards Zone Map, Adopted October 6, 2015.



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

***Less Than Significant Impact.*** Refer to Section 5.10.a, and Section 5.10.b. The Project would not substantially affect surface water or groundwater quality or quantity, and therefore, the Project's potential to conflict with implementation of such management plans would be less than significant.

### 5.11. LAND USE AND PLANNING

**a) Would the project physically divide an established community?**

**No Impact.** The Twin Lakes water tank site is an existing facility that provides storage capacity to meet water supply needs of existing development within the vicinity, which the Project would upgrade by replacing one water tank with a new larger water tank to provide additional capacity to serve new development being constructed in the area. The Twin Lakes Pump Station upgrades would occur within the boundaries of an existing facility located within an undeveloped area at the northern boundary of Chatsworth Park South, adjacent to railroad tracks. The Project would not expand the boundaries of the Pump Station site. Therefore, as no established communities would be physically divided by the proposed Project, there would be no impacts.

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

**No Impact.** The Twin Lakes Pump Station is an existing facility within the City of Los Angeles and is consistent with the OS zoning and Open Space General Plan land use designation. The proposed upgrades which include providing additional potable water pumping capacity, associated pipes and fittings and electrical components to the Pump Station would not conflict with the existing land use designation or zoning. The Twin Lakes water tank site is an existing facility within the County of Los Angeles and is consistent with the A-2-2 zoning and Rural Land General Plan designation. The Project would upgrade the existing facility by replacing an existing water tank with a larger water tank, which would not conflict with the existing land use or zoning. As such, the Project would not cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation for the site and there would be no impacts.

## 5.12 MINERAL RESOURCES

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

**No Impact.** The water tank site and Pump Station Site are not located within a mineral resource zone identified by the County General Plan.<sup>34</sup> The proposed Pump Station upgrades would occur within an existing Pump Station, the boundaries of which would not be expanded, and therefore would have no impact regarding the availability of mineral resources. The water tank site is currently occupied by two existing water tanks and is located within an area designated MRZ-3 by the California Geological Survey, which indicates “Areas containing mineral deposits the significance of which cannot be evaluated from available data.”<sup>35</sup> No commercial mineral extraction has occurred within the water tank site. Due to the minimal additional footprint that the new tank would occupy compared to the existing tank to be removed, the new tank would not substantially reduce the availability of any mineral resource. Additionally, as the area of open space around the water tank site is surrounded by nearby residential development, there is little likelihood that the land in the vicinity of the water tank site would potentially be used for mineral extraction purposes. As such, the Project would not result in a substantial loss of availability of known mineral resources and therefore no impact would occur.

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

**No Impact.** Refer to Section 5.12.a. No impact would occur.

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<sup>34</sup> Los Angeles County Department of Regional Planning, General Plan 2035, Figure 9.6: Mineral Resources, Adopted October 6, 2015.

<sup>35</sup> California Department of Conservation, Mineral Land Classification Map, Oat Mountain Quadrangle, Plate 1-14.

### 5.13. NOISE

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

**Less Than Significant Impact.** Noise is unwanted sound. Sound is mechanical energy that is transmitted by pressure waves through a compressible medium such as air. The sound pressure level, expressed in decibels (dB), has become the most common descriptor used to characterize the loudness of an ambient sound level. A dB is a ratio of the unit of sound pressure to an assumed zero sound level. Sound or noise can vary in intensity by over one million times within the range of human hearing so a logarithmic loudness scale similar to the Richter Scale is used to keep sound intensity numbers manageable. The human ear is not equally sensitive to all sound frequencies within the entire spectrum so noise levels at maximum human sensitivity are factored more heavily into sound descriptions in a process called A-weighting written as dBA. For the remainder of this analysis, references to decibels written as dB should be understood to mean dBA.

Time variations in noise exposure are typically expressed in Leq, a steady-state energy level equal to the energy content of the time varying period. Leq provides a statistical description of the sound level that is exceeded over some fraction of a given observation period. Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law requires that, for planning purposes, an artificial dB increment be added to quiet time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL), a weighted average of noise levels over time.

#### **Noise Sensitive Receptors**

Noise sensitive receptors may include residences, schools, hotels, and hospitals where excessive noise can interfere with normal activities. The nearest noise sensitive receptor to the Twin Lakes Pump Station site are residences located approximately 0.23 miles to the east, with substantial hilly terrain features between the homes and the Pump Station. The nearest existing sensitive receptor to the proposed water tank site is a single-family residence located approximately 0.15 miles to the west. During construction, materials and equipment would be delivered to and from the water tank site via a haul route that includes a portion of Iverson Road, as well as the unpaved access road between Iverson Road and the water tank site. The nearest residence to the haul route is located approximately 25 feet from the unpaved access road.

#### **Construction Noise Impacts**

The Los Angeles County Noise Ordinance restricts and regulates hours of construction operation and levels of construction noise. In Exterior Noise Standards, Chapter 28.08, Part 4, Specific Noise Restrictions, Section 12.08.440, construction noise associated with mobile equipment and short-term use of construction equipment (less than 10 days), the significance threshold is 75 dBA for single-family residences between the hours of 7:00 A.M. to 8:00 P.M., every day, except Sundays and legal holidays. At all other times, the construction noise threshold for single-family residences is 60 dBA. For stationary source equipment and long-term operation of construction equipment (10 days or more), the threshold is 60 dBA for single-family residences between the

hours of 7:00 A.M. to 8:00 P.M. every day, except Sundays and legal holidays. At all other times, the noise threshold is 50 dBA for single-family residences.

During construction, the highest noise levels to result from the proposed Project would be generated by the short-term use of a bulldozer for grading of the water tank site, which can generate noise levels of 85 dBA at 50 feet from the source.<sup>36</sup> In an outdoor environment, sound levels attenuate (reduce) through the air as a function of distance. Such attenuation is commonly referred to as “distance loss” or “geometric spreading”. For a point source, such as a bulldozer, the rate of sound attenuation is about 6 dB per doubling of distance from the noise source. Therefore, the Project’s short-term grading noise levels of about 85 dBA at 50 feet would be reduced to about 73 dBA at 200 feet, which would be less than the generally acceptable 75 dB exterior exposure level due to short-term activities as specified in the County Building Code. The estimated duration of soil export activities is less than one week. As discussed above, the nearest noise sensitive receptor to the water tank site is a residence located approximately 0.15 miles (or about 792 feet) to the west. The Project’s short-term grading noise levels would be approximately 61 dBA at 800 feet. As such, construction-related noise from the water tank site would not result in noise levels of greater than 75 dBA at the nearest existing noise sensitive receptor. Therefore, short-term noise impacts due to installation of the proposed water tank construction would be less than significant.

The proposed Pump Station upgrades would not require grading activities, which are generally associated with the loudest noise levels during construction. The nearest noise sensitive receptors are located approximately 0.23 miles (or about 1,200 feet) east of the Pump Station, and existing hills and rocky terrain features provide substantial noise shielding between the Pump Station and sensitive receptors. However, for a conservative evaluation assuming earth moving equipment may be used at the Pump Station site, noise levels of about 85 dBA at 50 feet would be attenuated by distance alone to about 73 dBA at 200 feet as discussed above, which would be below the generally acceptable 75 dB exterior exposure level specified in the County Building Code. As the nearest existing residence is approximately 1,200 feet from the Pump Station, temporary construction noise impacts due to Pump Station upgrades would be less than significant. Thus, construction noise impacts associated with the proposed water tank and Pump Station upgrades would be less than significant and no mitigation measures would be required.

### **Construction Transportation/Hauling Noise Impacts**

During construction activities, trucks would carry equipment and materials to and from the water tank site, which is accessed from a residential area. The specified haul route from the site to the nearest freeway ramps will extend south along Iverson Road from the water tank site into the City of Los Angeles, to Santa Susana Pass Road, then east to Topanga Canyon Road, and north to the State Route 118 access ramps. The Project would remove an estimated 3,000 cubic yards of soil material to be exported from the site along the specified haul route to the freeway as described above, and then on to a disposal site in Irwindale. The Project would use dump trucks with capacities of approximately 14 cubic yards each for exporting soil materials from the site, resulting in approximately 214 truckloads of soil to be transported, for a total of about 428 one-way trips including the return of empty trucks that would pass by residences along the haul route. The soil export hauling activities would occur over an approximately four (4) day duration. An

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<sup>36</sup> Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.

Evaluation of Construction Traffic Noise and Vibration<sup>37</sup> was prepared to evaluate potential noise and vibration effects of these construction transportation activities for sensitive receptors (residences) in close proximity to the haul route between the water tank site and the 118 freeway access ramps, which is included as **Appendix D**.

Section 12.08.440 of the Los Angeles County Code of Ordinances prohibits construction that would create a noise disturbance across a residential or commercial real-property line from 7:00 p.m. to 7:00 a.m. weekdays and at any time on Sundays or holidays. This County Code section also establishes maximum construction noise level restrictions at single-family residences of 75 dB Leq for mobile equipment, and 60 dB Leq for stationary equipment, during the specified daytime weekday hours. The City of Los Angeles similarly restricts construction activity noise to daytime weekday or Saturday hours, and the City's Municipal Code Section 112.05 states that any powered equipment or hand tool that produces a maximum noise level exceeding 75 dBA within 500 feet of a residential zone, when measured at a distance of 50 feet from the source, is prohibited unless compliance is technically infeasible.

The closest existing noise sensitive land use to any segment of the haul route is a single-family residence at 11470 Iverson Road, due to its proximity to the unpaved access road between Iverson Road and the Twin Lakes water tank site. Other nearby sensitive receptors consist of single-family residences located along Iverson Road in unincorporated County of Los Angeles, as well as residential uses in the City of Los Angeles, including multifamily residences along Santa Susana Pass Road, a single-family residence on Old Santa Susana Pass Road, and the Indian Hills Mobile Home Village on Topanga Canyon Road.

As the Project's construction activity would generate the highest frequency of truck traffic during the grading and soil export hauling phase, this evaluation is focused on effects associated with that phase. While trucks would also access the site during other phases, the effects of individual trucks passing would be similar, although those effects would occur at a much lower frequency of passes in a given day than during the grading/soil export phase.

Soil hauling would occur over approximately four (4) days, with an average of 54 truckloads of soil per day, which would average approximately 7 truckloads per hour. Including return trips of empty haul trucks, this would result in approximately 14 trips per hour within an 8-hour workday, to accommodate a total of approximately 428 one-way truck trips (approximately 214 loads leaving the site and 214 empty trucks returning). The hourly Leq noise levels from these dump truck trips on various roadways along the haul route was modeled using the Federal Highway Administration Traffic Noise Model 2.5 (FHWA TNM 2.5). Model inputs included hourly vehicle volumes, types, speeds, and receptor distances. Vehicle speeds were based on the posted limits for roadways.<sup>38</sup> Existing topography, walls, and buildings in the area that may provide some noise shielding of sensitive uses were not taken into account for this evaluation.

At the closest residence to the path of the haul route, which is adjacent to where the dirt road access to the water tank intersects Iverson Road, noise levels from truck hauling would be

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<sup>37</sup> Envicom Corporation, Evaluation of Construction Traffic Noise and Vibration for Twin Lakes Water Storage Tank And Pump Station Upgrades, June 26, 2020.

<sup>38</sup> For the unpaved access road from Iverson Road to the Project site, a haul truck speed of five miles per hour was used for the noise model input.

approximately 65.2 dBA Leq. At other residences along the haul route on Iverson Road, the temporary truck hauling would generate noise levels up to 54.3 dBA Leq. In the vicinity of sensitive receptors identified along the haul route on Santa Susana Pass Road and Topanga Canyon Road, project-related haul truck noise levels would not exceed 58 dBA Leq at a distance of 50 feet from the roadway centerline. These noise levels would be below the applicable construction noise standard for mobile equipment of 75 dBA Leq for uses in either the County or City jurisdictions.

The project would be required to comply with the County's restrictions on the hours that construction activity noise may occur. Additionally, noise levels from construction traffic would not exceed the applicable construction noise limits. Therefore, construction traffic noise impacts from construction transportation activities would be less than significant and no mitigation measures would be required.

### **Operational Noise Impacts**

Operations of the water storage tank would not require daily or frequent access by personnel, and therefore, operations of the water storage tank would not result in adverse noise effects associated with vehicle use. In general, operations of the water tank would not require the use of mechanical equipment or other equipment external to the proposed tank, and as such, operation of the water storage tank would be considered to be less than significant.

In the vicinity of the Twin Lakes Pump Station, existing noise sources include freight and passenger trains that pass by the site at a distance of approximately 150 feet. The proposed Pump Station upgrades would include the addition of three pumps, the operation of which would be similar to the six existing pumps that operate at the Pump Station under existing conditions. The proposed addition of a diesel powered 500 kW emergency standby generator at the Pump Station would introduce a new noise source to the existing facility. It is unknown how often electrical outages may occur requiring operation of the standby generator to maintain water pressure to the system it serves. Under normal operating conditions, the standby generator would be scheduled to run approximately 30 minutes each week for maintenance, and to ensure emergency readiness. Such short term operations would not substantially increase average ambient noise levels in the vicinity, which includes periodic noise from passing trains. Operations of the Pump Station facility would be subject to the City of Los Angeles Noise Ordinance as it lies within the jurisdiction of the City. Due to the distance of the Pump Station from the nearest sensitive receptor of approximately 0.23 miles, and existing topographical features and hills providing substantial noise shielding between the Pump Station and receptors, potential noise impacts due to the infrequent scheduled operation of the standby generator would be less than significant. Therefore, the potential of the Project to exceed applicable noise standards would be less than significant.

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

***Less Than Significant with Mitigation Incorporated.*** The Project's temporary construction activities would generate ground-borne vibration when heavy equipment travels over unpaved surfaces or when it is engaged in soil movement. Within the "soft" sedimentary surfaces of

undeveloped land throughout much of Southern California, ground vibration is quickly reduced with distance.

**Construction Vibration Impacts**

Groundborne vibrations from construction activities rarely reach levels that can damage structures. Because vibration is typically not an issue, very few jurisdictions have adopted vibration significance thresholds. Vibration thresholds have been adopted for major public works construction projects, but these relate mostly to structural protection (cracking foundations or stucco) rather than to human annoyance. A vibration descriptor commonly used to determine structural damage is the peak particle velocity (ppv) which is defined as the maximum instantaneous positive or negative peak of the vibration signal, usually measured in inches per second (in/sec). The threshold for potential structural vibration damage due to intermittent events for newer residential structures is 0.5 in/sec, and for older residential structures is 0.3 in/sec.<sup>39</sup> Below this level there is virtually no risk of building damage. Of the construction equipment anticipated to be used for construction of Project, a large bulldozer would generate the highest estimated vibration levels, which would be 0.089 PPV (in/sec) at 25 feet.<sup>40</sup> This would be well below the potential structural damage thresholds of 0.5 in/sec for newer residential structures, or 0.3 in./sec. for older residential structures.

For potential annoyance from vibrations, Caltrans indicates that vibration levels for continuous/frequent events are barely perceptible to humans at 0.01 PPV in/sec, distinctly perceptible at 0.04 PPV in/sec, and strongly perceptible at 0.1 PPV in/sec<sup>41</sup> as listed in **Table 5.13-1, Human Response to Groundborne Vibration:**

**Table 5.13-1  
Human Response to Groundborne Vibration**

Vibration Level PPV (inches/second)		Human Response
Transient Sources	Continuous/Frequent Intermittent Sources	
2.00	0.40	Severe
0.90	0.10	Strongly perceptible
0.25	0.04	Distinctly perceptible
0.04	0.01	Barely perceptible

Source: Caltrans Transportation and Construction Vibration Guidance Manual, April 2020. Table 20.

As discussed above, groundborne vibration levels quickly diminish with distance. Vibration levels of 0.089 PPV (in/sec) at 25 feet from a large bulldozer would be reduced to 0.031 PPV at 50 feet, which is considered to be barely perceptible. The estimated duration of onsite grading activities is approximately four days. As all existing and planned residences in the vicinity of the proposed water tank and Pump Station upgrades would be considerably greater than 50 feet distant from

<sup>39</sup> Caltrans Transportation and Construction Vibration Guidance Manual, April 2020.  
<sup>40</sup> Caltrans Transportation and Construction Vibration Guidance Manual, April 2020.  
<sup>41</sup> Caltrans, Transportation and Construction Vibration Guidance Manual, April 2020.



any use of heavy equipment during construction or operations, potential vibration impacts would be less than significant.

### **Offsite Construction Transportation/Hauling Vibration Impacts**

Construction transportation (trucking) can generate groundborne vibration, particularly when heavy equipment travels over unpaved or uneven surfaces; however, groundborne vibration levels are dampened substantially over a relatively short distance. A small portion of the project's haul route would be on the unpaved access road between the water tank site and Iverson Road. According to the Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual,<sup>42</sup> loaded trucks on unpaved roadways would generate vibration levels of 0.076 PPV in/sec at 25 feet.

As previously described, vibration levels of 0.3 PPV in/sec may potentially cause structural damage for older residential structures<sup>43</sup> and vibration levels of 0.5 PPV in/sec may potentially cause structural damage for newer residential structures. Below such levels, there is virtually no risk of building damage. As construction truck traffic would generate vibration levels of 0.076 PPV in/sec at 25 feet, which is the approximate distance from the unpaved access road to the nearest residential structure, such activities would not exceed vibration levels that could cause structural damage.

For potential annoyance from vibrations, Caltrans indicates that vibration levels are barely perceptible to humans at 0.01 PPV in/sec, distinctly perceptible at 0.04 PPV in/sec, and strongly perceptible at 0.1 PPV in/sec<sup>44</sup> as shown in Table 5.13-1 above. Based on the FTA vibration reference level for loaded trucks at 25 feet, project's temporary hauling activity vibration level of 0.076 PPV in/sec at the nearest residence would be between the 0.04 PPV in/sec level at which vibrations are considered distinctly perceptible and the 0.1 PPV in/sec level at which vibrations are considered strongly perceptible. According to the FTA, a 50 percent reduction in vehicle speeds would decrease vibration levels by approximately 4 to 6 VdB, which would be equivalent to an approximate 37 percent to 50 percent reduction in PPV in/sec.<sup>45</sup> Mitigation Measure NOI-1, has been identified to limit the speed of haul trucks along the unpaved access road between Iverson Road and the water tank to five miles per hour (mph) in the vicinity of nearby residences, in order to reduce vibrations to levels that would avoid potential temporary annoyance impacts. As these temporary vibration effects would not result in potential structural damage, would only occur during weekday daytime hours, would primarily be associated with soil hauling activities scheduled to occur for only four (4) days, would be substantially below strongly perceptible levels, and would be further reduced by implementation of Mitigation Measure NOI-1, the project's potential to result in substantial vibration impacts at the nearest receptor would be less than significant.

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<sup>42</sup> Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.

<sup>43</sup> Caltrans, Transportation and Construction Vibration Guidance Manual, April 2020.

<sup>44</sup> Caltrans, Transportation and Construction Vibration Guidance Manual, April 2020.

<sup>45</sup> Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.

**Mitigation Measures**

**NOI-1:** During construction activities, haul trucks traveling along the unpaved access road between Iverson Road and the Twin Lakes water tank site shall reduce speeds to 5 miles per hour in the vicinity of residences (within approximately 50 feet) to reduce vibration levels experienced at residences. Temporary signage shall be placed along the affected access road segment indicating the appropriate speed limitation.

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

**No Impact.** The nearest airport is the Van Nuys airport located over eight miles to the southeast. No private airstrips have been identified in the vicinity. Therefore, no impacts would occur.

#### 5.14 POPULATION AND HOUSING

- a) **Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes or businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

**No Impact.** The Twin Lakes water tank and Pump Station upgrades have been designed and sized to serve the Tract 53138 Deerlake Ranch residential development currently under construction, and therefore, would not induce substantial population growth, either directly or indirectly. Growth inducing impacts would be less than significant.

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

**No Impact.** The Twin Lakes water tank site and Pump Station do not include housing. The water tank site is currently occupied by two existing water tanks and the Pump Station is an existing facility. Therefore, no existing people or housing units would be displaced as a result of implementing the Project.

## 5.15 PUBLIC SERVICES

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

### a) Fire protection?

***Less Than Significant Impact.*** The Project site is located within the jurisdiction of the Los Angeles County Fire Department, which serves the unincorporated areas of Los Angeles County as well as 58 cities.

The Project water tank site would receive fire protection services from County Fire Station No. 75, which is located approximately 5.7 miles southwest of the Project site and maintains a three-person engine company. The County Fire Department has an automatic aid agreement with the City of Los Angeles in the event that additional services are needed during an incident. The first-due response unit to the Project site would be City Station No. 96, located at 21800 Marilla Avenue in Chatsworth, approximately 3.6 miles south of the Project site. In addition to Station No. 96, fire protection services would also be provided by City Station No. 28, located at 11641 Corbin Avenue in Porter Ranch, approximately 4 miles east of the Project site. The proposed water tank would not increase population in the vicinity or create additional demand for fire protection services and the facility is not a use that generally requires fire protection. The water tank portion of the Project would have no impact.

The Twin Lakes Pump Station is located within the City of Los Angeles, within the service area of first-due response unit, Los Angeles Fire Department (City) Station No. 96, located approximately two miles southeast of the Pump Station site. The Pump Station upgrades would not increase population served by Station No. 96 and would not require additional fire station facilities to continue providing fire protection services to the Pump Station site. As the proposed Pump Station upgrades are a minor addition to an existing facility, this portion of the Project would have a less than significant impact.

### b) Police protection?

***No Impact.*** The proposed water tank location would be located within the jurisdiction of the Los Angeles County Sherriff's Department (LACSD). The nearest LACSD station to serve the water tank site would be the Malibu/Lost Hills Station, located at 27050 Agoura Road in Agoura Hills.<sup>46</sup> The Pump Station, which is within the jurisdiction of the Los Angeles Police Department (LAPD), is an existing facility and proposed upgrades would be minimal in size, not change the land use, and not require onsite employees, and thus would not increase the demand for police protection at that location. In addition, the Pump Station includes wall-mounted security lights on the central structure.

<sup>46</sup> Los Angeles County Sherriff's Department, Stations, Accessed on October 28, 2019 at: <https://lasd.org/stations/>.

The proposed Project would not increase the population served by either the Los Angeles County Sherriff's Department or the Los Angeles Police Department. Therefore, the Project would not require new police facilities and would have no impact on police protection services.

**c) Schools?**

**No Impact.** The proposed water tank and pump upgrades would not generate population (on-site employees or residents) and thus would not increase student enrollment. Therefore, the Project would not require the construction of new school facilities that could result in adverse physical impacts on the environment, and no impact would occur.

**d) Parks?**

**No Impact.** The proposed water tank and pump upgrades would not generate population (on-site employees or residents) and therefore would not generate an increase in use of park facilities. Therefore, the Project would not require the construction of new park facilities that could result in adverse physical impacts on the environment, and no impact would occur.

**e) Other public facilities?**

**No Impact.** The Project would not generate on-site employees or any housing that would affect operations of other public facilities. No additional public facilities impacts would occur.

## 5.16 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?**

**No Impact.** The Project would not generate on-site employees or any housing that would increase recreational uses. The proposed Project would therefore not result in an increase in the use of park or recreation facilities that would require construction of new park or recreation facilities, the construction of which could result in adverse physical impacts to the environment. No impact would occur.

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

**No Impact.** Refer to Section 5.16.a. The proposed Project would not result in an increase in the use of park or recreation facilities that would require construction of new park or recreation facilities, the construction of which could result in adverse physical impacts to the environment. No impact would occur.

## 5.17 TRANSPORTATION/TRAFFIC

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

**Less Than Significant Impact.** During construction, material deliveries and workers would temporarily increase traffic volumes on roadways accessing the water tank and Pump Station sites. The Project's haul route for materials and equipment trucks accessing the Twin Lakes water tank site would exit State Route (SR) 118 at Topanga Canyon Boulevard and proceed south to Santa Susana Pass Road, and then west to Iverson Road, and then north to the dirt access road that leads to the water tank. The dirt access road is located approximately 1,300 feet north of a gate that controls access to the private community in which the water tank site is located. The same route would be used in reverse for construction-related traffic leaving the Project Site. All construction parking and staging would occur within or adjacent to the Project component sites and would not interfere with roadway operations. Project construction activities would occur over an estimated six months. The Project's grading and soil export hauling activities would occur for four days. A Construction Traffic Analysis was prepared for the Project<sup>47</sup> (**Appendix E**), which determined the estimated average daily trips (ADT) resulting from the Project's construction activities based on the construction schedule and anticipated number of workers and equipment. As shown in the Construction Traffic Analysis (Appendix E), the highest volume of traffic generated during construction of the Project would be approximately 114 ADT that would occur for four (4) days during soil export activities in which trucks would remove soil materials from the water tank site via the previously described haul route. The soil export haul truck trips would be spread over the course of approximately four 8-hour workdays, and would not be concentrated within a peak hour, and therefore would average approximately 14 truck trips on the haul route roads per hour during the approximately four days of soil export. The ultimate destination for exported soils would be a facility in Irwindale, CA. For the remainder of the construction phases, the Project's construction trips would range from approximately 8 to 22 ADT. Given the short duration of the construction project and the minor amount of traffic that would be generated on a day-to-day basis (8 to 114 ADT), and that such minor amounts would not be concentrated within peak hour travel times, the Project would not significantly impact traffic flows along the proposed haul route.

As such, the proposed water tank construction activities would not conflict with any applicable plan or ordinance regarding measures of effectiveness for performance of the circulation system. Therefore, the Project's traffic flow impacts during construction would be less than significant.

During operations, the Project would not generate daily trips that could conflict with measures of effectiveness or affect the performance of the circulation system and would have no impact on long-term traffic movement.

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

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<sup>47</sup> Associated Transportation Engineers, Traffic Analysis for the Twin Lakes Water Tank Construction Project, San Fernando Valley, June 30, 2020.

**No Impact.** The Project does not propose facilities that would generate daily trips or vehicle miles traveled (VMT) on area roadways. Therefore, the Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), and no impact would occur.

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

**Less Than Significant with Mitigation Incorporated.** The Project would replace an existing water tank with a new, larger water tank on the Project Site, and upgrade an existing water pumping facility, which would not alter roadway design or introduce a land use that would be incompatible with existing traffic patterns. No daily access during operations would be required, and periodic vehicle access to the site for maintenance/inspection of the Project facilities would not substantially differ from such access that occurs under existing conditions. As stated above, the Project does not propose facilities that would generate daily trips and therefore impacts would be less than significant regarding increasing hazards or incompatible uses.

During construction, the Project would temporarily introduce truck traffic on some portion of residential roadways near the Project Site. The daily frequency of trucks used for hauling equipment and materials to and from the Project Site would vary depending on the construction phase in process at a given time. As shown in the Construction Traffic Analysis (Appendix E), the highest volume of traffic generated during construction of the Project would be approximately 114 ADT, approximately 14 trucks per hour, that would occur for four (4) days during soil export activities. For the water tank replacement construction period, vehicles including large trucks would access the site via the haul route described above in Section 5.17a, passing through a small portion of the existing residential neighborhood within which the water tank site is located. Within the gated neighborhood, the construction vehicles would travel along approximately 1,300 feet of the residential roadway (Iverson Road) between the private neighborhood's entrance gate and the unpaved access road to the water tank site. Construction vehicles, including large trucks, would have to drive over the existing rolled curb at the edge of Iverson Road to enter and exit the water tank site. The District would require, as a condition of approval, that a temporary physical transition be placed at the water tank access road entry during construction, and/or require that any damage of the curb caused by construction traffic be repaired following construction activities.

The Project's Construction Traffic Analysis conducted a sight distance evaluation at the water tank's access driveway intersection with Iverson Road, which determined that vehicles exiting the tank site would have unobstructed views of traffic on Iverson Road, extending approximately 375 feet to the north and approximately 735 feet to the south. Based on the Caltrans Highway Design Manual sight distance standards, the minimum stopping sight distance standard for a roadway with a 25 mile per hour (mph) speed limit, which is the posted speed limit on Iverson Road, would be 150 feet. Therefore, the existing sight distance for vehicles exiting the water tank site driveway would be more than adequate to meet the Caltrans criteria. Implementation of Mitigation Measure TRAF-1, would further ensure that during temporary construction activities, the sight distance for vehicles such as haul trucks exiting the access road onto the residential street would not be impaired by vehicles that may be parked on Iverson Road near access road entrance/exit. The Project's potential to result in substantial traffic impacts associated with temporary incompatible uses associated with construction-related transport of materials, equipment, and workers would be reduced to less than significant with mitigation.



**Mitigation Measures**

**TRAF-1:** During construction activities, temporary no parking signs or traffic cones shall be placed on Iverson Road north and south of the Twin Lakes water tank site access driveway to ensure that adequate sight distances are maintained for trucks exiting the Project Site.

**d) Result in inadequate emergency access?**

***Less Than Significant Impact.*** The water tank site is an existing water tank facility at the terminus of an unpaved access road. A paved driveway would be provided around the new tank perimeter, as is currently provided for the existing tank to be removed. The Pump Station site would continue to be accessed by the existing unpaved access road that currently serves the site. The proposed Project would not restrict or otherwise alter emergency access available to the water tank site or the pump station, and impacts would be less than significant.

## 5.18 TRIBAL CULTURAL RESOURCES

This section is based on a Phase I Cultural Resource Assessment letter report (Cultural Report) prepared by Envicom Corporation on October 18, 2019, provided in **Appendix C**. As the Pump Station upgrades would occur within the confines of the existing Pump Station, which is fenced, and primarily paved or barren ground, that component of the Project would have no impact on tribal cultural resources, and therefore, this analysis will focus on the undeveloped water tank site.

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

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

***Less Than Significant With Mitigation Incorporated.*** As discussed in Section 5.5, Cultural Resources, the Phase I Cultural Resources Assessment, the SCCIC record search was positive for a previously identified cultural resource located within the Project development footprint, CA-LAN-881, and five resources within the study area. The record search was also positive for three previously completed cultural resource reports, both within the Project development footprint and in the surrounding buffer study area. Although the result of the SCCIC record search was positive for cultural resources within the Project development footprint, CA-LAN-881, a lithic scatter on top of the flat hill where the existing water tanks are located, was determined by archeologists to have been severely impacted, then destroyed by water tank and access road development in the area. This was corroborated by historical USGS maps and the pedestrian survey completed on October 8, 2019, as no early historic or prehistoric artifacts were observed and therefore concluded negative for cultural resources within the Project development footprint. In addition, the NAHC was contacted on October 3, 2019 requesting a records search and yielded negative results.

California Assembly Bill 52 (AB 52) established a formal consultation process for California Native American Tribes to identify potential significant impacts to Tribal Cultural Resources, as defined in Public Resources Code §21074, as part of CEQA. As specified in AB 52, lead agencies must provide notice inviting consultation to California Native American tribes that are traditionally and culturally affiliated with the geographic area of a proposed project if the Tribe has submitted a request in writing to be notified of proposed projects. The Tribe must respond in writing within 30 days of the City's AB 52 notice. The NAHC provided a list of Native American groups and individuals who might have knowledge of the religious and/or cultural significance of resources that may be in and near the Project site.

The LVMWD mailed notifications of the Project to local tribal groups known to have cultural ties in this area. A response was received by the Fernandeano Tataviam Band of Mission Indians requesting consultation, which was conducted on January 7, 2020.

Mitigation Measure **CUL-1**, discussed above in Section 5.5, Cultural Resources, would require that a Native American monitor be at the water tank site during grading, to ensure that in the event

a tribal cultural resource is encountered, impacts would be reduced to less than significant with mitigation.

**Mitigation Measures**

Mitigation measures CUL-1 shall apply.

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

***Less Than Significant with Mitigation Incorporated.*** See response to 5.17-a above. Impacts would be less than significant with mitigation incorporated.

**Mitigation Measures**

Mitigation measures CUL-1 shall apply.

## 5.19 UTILITIES AND SERVICE SYSTEMS

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

**No Impact.**

### **Water Facilities**

The Project itself consists of upgrades to existing water storage and pumping facilities to serve the Deerlake Ranch residential development currently under construction. Although the Project is specifically water facilities, it would not require additional water facilities beyond those evaluated within this Initial Study and MND. As no relocation or construction of new or expanded water facilities would be required to serve the proposed water tank and pumping station upgrades, no impact would be beyond those related to the proposed Project itself would occur.

### **Wastewater Facilities**

The Project site would not provide facilities that would generate wastewater or require relocation of existing wastewater treatment facilities, and thus would have no impact regarding wastewater treatment.

### **Storm Water Facilities**

The Pump Station upgrades and water tank replacement would occur within the existing sites with such facilities, and would result in minimal additional impervious surfaces beyond any currently impervious area. Stormwater runoff would continue to be conveyed to the unpaved undeveloped surroundings as under existing conditions. As such, the proposed Pump Station upgrades and replacement water tank would have no impact associated with new or expanded storm water drainage facilities.

### **Electric Power, Natural Gas, and Telecommunications Facilities**

The Pump Station upgrades and replacement water tank would be provided within existing facilities currently occupied by similar equipment that are served by necessary infrastructure. As such, the Project would not require the relocation or construction of new or expanded electric power, natural gas, or telecommunications facilities, and would have no impact associated with such facilities.

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

**No Impact.** The Project proposes to construct and operate water supply infrastructure to meet demands of a residential development currently being constructed for which water supply impacts have been addressed in a separate environmental document. As such, the Project would not generate a demand for water supplies and would have no impact.

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

**No Impact.** No wastewater would be generated by the Project, and therefore no impact would occur.

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

**Less Than Significant Impact.** The proposed water tank and Pump Station would only be accessed periodically by personnel for routine inspections and/or maintenance, and therefore would not generate daily solid waste requiring disposal at a landfill.

During short-term demolition and construction activities, debris that is not recycled could be disposed of at the nearby Sunshine Canyon landfill, which is expected to have capacity for another 20 years. The Project may also dispose of inert construction waste at an inert waste facility, such as Azusa Land Reclamation, which has a capacity to operate for about 28 years.<sup>48</sup> The Pump Station would not produce solid waste from the minor upgrades. Therefore, the Project would not be served by a landfill with insufficient capacity and impacts would be less than significant.

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

**No Impact.** The proposed water tank and Pump Station would only be accessed by personnel for routine inspections and/or maintenance and would therefore not generate daily solid waste requiring disposal. During construction, the Project would be required to comply with Los Angeles County Municipal Code Section 5.408.1 regarding recycling of construction debris from the water tanks station to the extent feasible. Therefore, the Project would not be in conflict with statutes and regulations related to solid waste and have no impact.

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<sup>48</sup> County of Los Angeles Department of Public Works, County of Los Angeles Countywide Integrated Waste Management Plan 2016 Annual Report, September 2017.

## 5.20 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?**

**No Impact.** The water tank site and the Pump Station site are both located within a Very High Fire Hazard Severity Zone.<sup>49</sup> The Project is not located directly along a County designated emergency response plan route.<sup>50</sup> The Pump Station is located at the end of an unpaved road and would not be used for an emergency response or evacuation plan. The water tank site is an existing water tank facility at the terminus of an unpaved access road, which is not and would not be used for an emergency response or evacuation plan. No existing or planned roadways would pass through the sites that either Project component could impede. As no daily traffic would be generated by either Project component, there would be no impact regarding physical interference with an emergency response or evacuation plan.

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

**Less Than Significant Impact.** The Project components would not be regularly occupied by personnel, with the exception of occasional maintenance and inspections. The Twin Lakes Pump Station upgrades would occur within the existing Pump Station that is predominantly paved and would have additional paving added where new equipment would be installed. A minimum four-foot buffer of paving would be provided around the perimeter of the proposed standby generator, and a minimum of three feet of paving would buffer all other Pump Station components. An existing fire hydrant within the Pump Station site would be retained by the Project. The Twin Lakes water tank site is an existing facility that would be expanded by replacing one of the existing water tank with a larger one. An approximately 15-foot wide asphalt access road would be provide a buffer between the proposed water tank and undeveloped lands. The Pump Station upgrades and water tank proposed for the Project would, in addition to serving the needs of future residents of the Deerlake Ranch residential project, provide water storage and maintain pressure for fire hydrants for use by the fire fighters to protect people or structures in the event of wildfire. As such, the potential that the Project could exacerbate wildfire risks and contribute to exposure of Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire would be less than significant.

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

<sup>49</sup> CalFire, Fire and Resource Assessment Program, Los Angeles County, Very High Fire Hazard Severity Zones in LRA, As Recommended by Cal Fire

<sup>50</sup> Los Angeles County Department of Regional Planning, General Plan Figure 12.6: Disasters Route Map, Adopted October 6, 2015.

**No Impact.** The Twin Lakes Pump Station and the Twin Lakes Water Tank site are both existing facilities. The proposed upgrades at each of these facilities would not require installation or maintenance of additional roads, fuel breaks, power lines or other utilities. The purpose of the Project is to provide adequate water storage and pressure (including for emergency firefighting purposes) to serve a new development under construction in the vicinity. As such, potential impacts regarding the installation or maintenance of wildfire associated infrastructure to serve the proposed Project would have no impact.

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

**Less Than Significant Impact.** The Twin Lakes Pump Station upgrades would occur within the existing Pump Station that is predominantly paved and would have additional paving added where new equipment would be installed. There are no nearby habitable structures downslope or downstream that could be affected by flooding or landslides from the Project site. The Twin Lakes Water Tank site is an existing facility that the Project would upgrade by replacing a smaller water tank with a larger water tank. As such, the potential that the Project could exacerbate potential downslope or downstream flooding or landslides would be less than significant.

## 5.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

***Less Than Significant Impact with Mitigation Incorporated.*** Mitigation measures have identified above to reduce potentially significant impacts regarding biological resources as well as cultural resources to less than significant levels. Implementation of the mitigation measures provided in Section 3.2, Mitigation Monitoring and Reporting Program, would reduce impacts on the environment regarding biological and cultural resources to less than significant levels.

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

***Less Than Significant Impact.*** The proposed Project would not result in cumulative impacts beyond those identified as project level impacts. As the Project site components would not generate an increase in on-site employees or resident population, and would not generate daily vehicle trips, the Project’s potential impacts would generally be limited to the short-term construction period for issue areas such as biological resources, cultural resources, traffic, air quality, GHG emissions, and noise.

As concluded in the previous discussions in Section 5.0 for each of the environmental topics, impacts from the proposed Project are considered to be less than significant, or would be reduced to less than significant after the incorporation of mitigation measures. The Project’s incremental contribution to cumulative impacts associated with development in the County and City of Los Angeles, would not be cumulatively considerable, the effects of which would be less than significant.

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

***Less Than Significant Impact.*** The Project would not directly or indirectly cause environmental impacts that could cause substantial adverse effects on human beings as discussed in this MND for each topic in the environmental checklist. Once operational, the site would be accessed only by personnel responsible for periodic testing and maintenance activities, and would not have post-construction impacts that would cause substantial adverse effects on human beings. Therefore, the Project’s direct or indirect effects on human beings would be less than significant.



## 6.0 PREPARERS AND REFERENCES

### PREPARERS OF THE INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

Envicom Corporation  
4165 E. Thousand Oaks Boulevard, Suite 290  
Westlake Village, CA 91362  
Contact: Mr. Charles Cohn, Project Manager

#### **Contributing Staff:**

Mr. Charles Cohn, Project Manager  
Ms. Laura Kaufman, Vice President, Director of Environmental Services  
Ms. Jessica Hitchcock, Associate Environmental Analyst  
Chris Boyte, Graphics Manager/GIS  
Renee Mauro, Office Manager  
Mr. Dan Kaufman, Environmental Planner

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## SECTION 7.0 RESPONSES TO COMMENTS

Pursuant to State California Environmental Quality Act (CEQA) Guidelines Section 15073, the Initial Study/Mitigated Negative Declaration (IS/MND) was circulated for a 30-day period, between September 10, 2020 through October 9, 2020 to the State Clearinghouse, Responsible Agencies, and interested parties for review and comment.

LVMWD received two (2) comment letters regarding the MND during the public review period. State CEQA Guidelines Section 15074 requires the decision-making body to consider the proposed IS/MND together with any comments received during the public review process. In order to address stated concerns of the commenters, and to provide the LVMWD with additional information upon which to base their decision, the following Responses to Comments has been prepared. Comment letters were received from the persons/agencies shown in **Table 7-1, Comments Received**. Each comment letter has been labeled numerically based on the order in which it was received, with each individual comment identified by a letter (i.e., the first comment in Letter #1 is labeled Comment 1-A). A copy of each comment letter is provided in this section, followed by the responses.

**Table 7-1**  
**Comments Letter Received**

Comment Letter	Agency/Name	Date
1	Department of Transportation	September 11, 2020
2	California Department of Fish and Wildlife	October 5, 2020

Where applicable, minor changes have been made to the text of the IS/MND in order to clarify or address an issue raised by a commenter. Such minor changes are noted within the response to the comment, and are also shown in the Final IS/MND using the following conventions:

- Text added to the Final IS/MND is shown as underline.
- Text deleted from the Final IS/MND is shown as ~~strikethrough~~.

Textual changes to the Final IS/MND do not constitute “substantial revision” as defined in State CEQA Guidelines Section 15073.5(b); therefore, recirculation of the Final IS/MND is not required.

**DEPARTMENT OF TRANSPORTATION**

**DISTRICT 7**

100 S. MAIN STREET, MS 16

LOS ANGELES, CA 90012

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September 11, 2020

Ms. Mercedes Acevedo  
Las Virgenes Municipal Water District  
4232 Las Virgenes Road  
Calabasas, CA 91302-1994

RE: Twin Lakes Water Storage Tank and  
Pump Station Upgrades Project  
Vic. LA-103/ PM 1.75, LA-01/PM 8.11  
SCH # 2020090033  
GTS # LA-2020-03358AL-MND

Dear Ms. Acevedo:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The Project is to replace existing 400,000 MG water tank with 1 MG water tank in unincorporated LA County. The project also includes the installation of additional pumps and associated equipment at existing pumping station in the City of Los Angeles.

The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California’s economy and livability. Senate Bill 743 (2013) has codified into CEQA law and mandated that CEQA review of transportation impacts of proposed development be modified by using Vehicle Miles Traveled (VMT) as the primary metric in identifying transportation impacts for all future development projects. You may reference to The Governor’s Office of Planning and Research (OPR) for more information.

<http://opr.ca.gov/ceqa/updates/guidelines/>

Please be reminded that any work performed within the State Right-of-way will require an Encroachment Permit from Caltrans if the pipeline or pump construction is at State Right-of-way. Any modifications to State facilities must meet all mandatory design standard and specifications.

1-A

Storm water run-off is a sensitive issue for Los Angeles and Ventura counties. Please be mindful that projects should be designed to discharge clean run-off water. Additionally, discharge of storm water run-off is not permitted onto State highway facility (SR-18) without any storm water management plan.

1-B

Transportation of heavy construction equipment and/or materials, which requires the use of oversized-transport vehicles on State highways, will require a transportation permit from Caltrans when transporting disposed materials. It is recommended that large size truck trips be limited to off-peak commute periods.

1-C

If you have any questions, please feel free to contact Mr. Alan Lin the project coordinator at (213) 897-8391 and refer to GTS # LA-2020-03358AL-MND.

Sincerely,

*Miya Edmonson*

MIYA EDMONSON  
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

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**RESPONSES TO COMMENT LETTER 1 – DEPARTMENT OF TRANSPORTATION  
(SEPTEMBER 11, 2020)****Comment 1-A:**

Please be reminded that any work performed within the State Right-of-way will require an Encroachment Permit from Caltrans if the pipeline or pump construction is at State Right-of-way. Any modifications to State facilities must meet all mandatory design standard and specifications.

**Response to Comment 1-A:**

The Project does not propose any work within a state right-of-way. No new environmental issues are raised in this comment.

**Comment 1-B:**

Storm water run-off is a sensitive issue for Los Angeles and Ventura counties. Please be mindful that projects should be designed to discharge clean run-off water. Additionally, discharge of storm water run-off is not permitted onto State highway facility (SR-18) without any storm water management plan.

**Response to Comment 1-B:**

The Project does not propose to discharge any storm water on any state highway. As stated in the IS/MND Section 5.10, Hydrology and Water Quality, the Project would be required to implement best management practices (BMPs) to minimize erosion and sedimentation from exposed soils during grading and construction, and would not violate any water quality standards or waste discharge requirements. The Project would be required to comply with all applicable regulatory requirements related to waste discharge. No new environmental issues are raised in this comment.

**Comment 1-C:**

Transportation of heavy construction equipment and/or materials, which requires the use of oversized-transport vehicles on State highways, will require a transportation permit from Caltrans when transporting disposed materials. It is recommended that large size truck trips be limited to off-peak commute periods.

**Response to Comment 1-C:**

If transport of equipment or materials to/from the Project site during construction will require oversized-transport vehicles, the Project will be required to obtain any necessary oversize vehicle permits from Caltrans, and comply with any of the permit's conditions if restricted to off-peak hours.

Regarding peak hour truck traffic, the potential for peak hour traffic impacts are evaluated in Section 5.17, Transportation/Traffic of the IS/MND. As evaluated, the IS/MND states that the highest volume of traffic generated by Project construction would occur for only about four (4) days for soil export, and would consist of approximately 114 average daily trips (ADT). This would result in approximately 14 trucks per hour on state highways distributed at various locations along the haul route, for a 4-day period. As soil export truck trips would occur throughout the workday,

they would primarily occur during off-peak hours. The remainder of the construction duration would result in ADT of between eight and 22 trips, which would consist primarily of worker transportation vehicles rather than large trucks. As such, the IS/MND concluded that the Project would not result in significant congestion on area roadways (including state highways) during peak hours. No new environmental issues are raised in this comment.

State of California – Natural Resources Agency  
DEPARTMENT OF FISH AND WILDLIFE  
South Coast Region  
3883 Ruffin Road  
San Diego, CA 92123  
(858) 467-4201  
[www.wildlife.ca.gov](http://www.wildlife.ca.gov)

**GAVIN NEWSOM, Governor**  
**CHARLTON H. BONHAM, Director**



2

October 5, 2020

Mercedes Acevedo  
Las Virgenes Municipal Water District  
4232 Las Virgenes Rd  
Calabasas, CA 91302  
[MAcevedo@lvmwd.com](mailto:MAcevedo@lvmwd.com)

**Subject: Twin Lakes Water Storage Tank and Pump Station Upgrades, Mitigated Negative Declaration (MND), Los Angeles County, SCH #2020090033**

Dear Ms. Acevedo:

The California Department of Fish and Wildlife (CDFW) has reviewed the above-referenced Twin Lakes Water Storage Tank and Pump Station Upgrades (Project). The MND’s supporting documentation includes a *Biological Resources Letter Report* (BRR). Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

**CDFW’s Role**

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

CDFW is also submitting comments as a Responsible Agency under CEQA (Public Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in “take”, as defined by state law, of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), or state-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish & G. Code, §1900 et seq.) authorization as provided by the applicable Fish and Game Code will be required.

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### Project Description and Summary

**Objective:** The proposed Project will include the replacement of an existing 0.4 million-gallon (MG) water tank with a 1 MG water tank. The Project would require grading of approximately 0.21 acres, primarily on land already developed where the current water tank to be replaced is located. A further 0.57 acres adjacent to the access road would be temporarily impacted for staging of equipment and materials for Project construction. This replacement will include the installation of additional pumps and associated equipment at an existing pumping station, approximately 1.2 miles southwest of tank site.

2-B

**Location:** The water tanks site is located approximately 500 feet north of the SR-118 freeway, and approximately 0.5 mile west of the Topanga Canyon Road (SR-27) / SR-118 freeway interchange, in an unincorporated portion of Los Angeles County, northwest of the San Fernando Valley. The Twin Lakes Pump Station is located approximately 4,600 feet south of the SR-118 Freeway, within the City of Los Angeles boundary, in the northwest portion of the San Fernando Valley, approximately 0.4 miles northwest of the western terminus of Devonshire Street.

### Comments and Recommendations

CDFW offers the comments and recommendations below to assist Las Virgenes Municipal Water District (LVMWD) in adequately identifying, avoiding, and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. CDFW recommends the measures or revisions below be included in a science-based monitoring program that contains adaptive management strategies as part of the Project's CEQA mitigation, monitoring and reporting program (Public Resources Code, § 21081.6 and CEQA Guidelines, § 15097).

2-C

#### Comment #1: Impacts to Nesting Birds

**Issue:** The BRR states that, "If vegetation clearing (including tree pruning and removal) or other Project construction is to be initiated during the bird-breeding season (February 1 through August 31), two (2) preconstruction/grading surveys shall be conducted by a qualified ornithologist (a person with a biology degree and/or established skills in bird recognition)." While CDFW agrees that a qualified individual should conduct the surveys, there is concern over the lack of primary avoidance measures. In addition, the occurrence of oak woodland and other vegetation communities indicate the potential for nesting within and around the Project vicinity.

**Specific impacts:** Construction during the breeding season of nesting birds could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment in trees directly adjacent to the Project boundary. The Project could also lead to the loss of foraging habitat for potentially sensitive bird species.

2-D

**Why impact would occur:** Impacts to nesting birds could result from ground disturbing and construction activities. Project disturbance activities could result in mortality or injury to nestlings, as well temporary or long-term loss of suitable foraging habitats. Construction during the breeding season of nesting birds could result in the incidental loss of breeding success or otherwise lead to nest abandonment on site and around the Project vicinity.



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**Evidence impact would be significant:** The loss of occupied habitat or reductions in the number of rare bird species, either directly or indirectly through nest abandonment or reproductive suppression, would constitute a significant impact absent appropriate mitigation. Furthermore, nests of all native bird species are protected under state laws and regulations, including Fish and Game Code sections 3503 and 3503.5.

Fully protected status precludes CDFW from authorizing any amount of incidental take or intentional take to meet any project mitigation requirement. When projects show the potential to cause take of fully protected species, CDFW advises on appropriate measures to avoid take. Given the legal status of fully protected animals, take avoidance measures should meet very high standards of effectiveness, substantially greater than the measures to minimize take required under Incidental Take Permits.

**Recommended Potentially Feasible Mitigation Measure(s):**

**Mitigation Measure #1:** To protect nesting birds that may occur on site or adjacent to the Project boundary, CDFW recommends that no construction should occur from February 15 (January 1 for raptors) through August 31.

**Mitigation Measure #2:** If avoidance is not feasible, a qualified biologist should complete a survey for nesting bird activity within a 500-foot radius of the construction site. The nesting bird surveys should be conducted at appropriate nesting times and concentrate on potential roosting or perch sites. CDFW concurs with the frequency of survey events as stated in BIO-1 of the MND and that they should be conducted prior to the beginning of any Project-related activity likely to impact raptors and migratory songbirds, for the entire Project site. If Project activities are delayed or suspended for more than 7 days during the breeding season, repeat the surveys. If nesting raptors and migratory songbirds are identified, CDFW recommends the following minimum no-disturbance buffers be implemented: 300 feet around active passerine (perching birds and songbirds) nests, 500 feet around active non-listed raptor nests and 0.5 mile around active listed bird nests.

These buffers should be maintained until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. These buffers should be increased if necessary, to protect the nesting birds.

It should be noted that the temporary halt of Project activities within nesting buffers during nesting season does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. Additional mitigation would be necessary to compensate for the removal of nesting habitat within the Project site based on acreage of impact and vegetation composition. CDFW should be consulted to determine proper mitigation for impacts to occupied habitat depending on the status of the bird species. Mitigation ratios would increase with the occurrence of a California Species of Special Concern and would further increase with the occurrence of a CESA-listed species.

**Mitigation Measure #3:** CDFW recommends surveying the entire development project site to determine the potential distribution of fully protected species and assure that “take” will be avoided during development project construction. The environmental document should also include measures to preclude “take” on a development project site during operations and from



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temporary traffic and human presence increased related to construction. The environmental document should analyze the potential “take” as a result of habitat modification. If a development project’s modification of occupied habitat causes mortality of individuals, then the development project will be considered the cause of the take. Therefore, to avoid take, construction and operation activities should avoid all raptors by a distance of no less than the distance that the specific species are known or expected to travel within their home range, based on telemetry, mark-recapture, or other data.

2-D

### **Comment #2: Impacts to Candidate Endangered Species – Crotch’s Bumble Bee**

**Issue:** Regarding Crotch’s bumble bee (*Bombus crotchii*), Attachment 4 (Special-Status Plant and Wildlife Species Potential for Occurrence) in the BRR states, “Too little is known of the biology of this species to speculate whether it is present but there is limited suitable habitat within the study area. Limited food plants were located within the development area.” CDFW is concerned there has been no attempt to survey for this special status species that has the possibility to be on site. In addition, survey efforts would inform LVMWD if any mitigation for this species may be necessary.

**Specific Impact:** Project ground disturbing activities such as grading and grubbing may result in crushing or filling of active bee colonies, causing the death or injury of adults, eggs, and larvae. The Project may remove bee habitat by eliminating native vegetation that may support essential foraging habitat.

**Why Impact would occur:** Impacts to Crotch’s bumble bee could result from ground disturbing activities. Project disturbance activities could result in mortality or injury to hibernating bees, as well as temporary or long-term loss of suitable foraging habitats. Construction during the breeding season of bees could result in the incidental loss of breeding success or otherwise lead to nest abandonment.

2-E

**Evidence Impact would be significant:** On June 12, 2019, the California Fish and Game Commission accepted a petition to list the crotch bumble bee as endangered under the California Endangered Species Act (“CESA”), determining the listing “may be warranted” and advancing the species to the candidacy stage of the CESA listing process. The Project’s potential to substantially reduce and adversely modify habitat for Crotch’s bumble bee, reduce and potentially seriously impair the viability of populations of Crotch’s bumble bee, and reduce the number and range of the species while taking into account the likelihood that special status species on adjacent and nearby natural lands rely upon the habitat that occurs on the proposed Project site.

### **Recommended Potentially Feasible Mitigation Measure(s):**

**Mitigation Measure:** Due to potentially suitable habitat within the Project site, within one year prior to vegetation removal and/or grading, a qualified entomologist familiar with the species behavior and life history should conduct surveys to determine the presence/absence of Crotch’s bumble bee. Surveys should be conducted during flying season when the species is most likely to be detected above ground, between March 1 to September 1 (Thorp et al. 1983). Survey results including negative findings should be submitted to CDFW prior to initiation of Project activities. If “take” or adverse impacts to Crotch’s bumble bee cannot be avoided either during

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Project activities or over the life of the Project, LVMWD must consult CDFW to determine if a CESA incidental take permit is required (pursuant to Fish & Game Code, § 2080 et seq.).

2-E

**Comment #3: Impacts to Bat Species, including California Species of Special Concern**

**Issue:** The Project includes activities that will result in the removal of trees and vegetation that may provide foraging habitat for bats. In addition, Attachment 4 (Special-Status Plant and Wildlife Species Potential for Occurrence) in the BRR identifies the hoary bat (*Lasiurus cinereus*), the Townsend’s big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), western mastiff bat (*Eumops perotis californicus*) and the pallid bat (*Antrozous pallidus*) (the big-eared, spotted, western mastiff, western red, and pallid bats are designated California Species of Special Concern), as potentially present on site. CDFW is concerned that there is no mitigation for potential impacts to a number of bat species that may occur on site.

**Specific impacts:** Project activities include the removal of trees, vegetation, and/or structures that may provide foraging habitat and therefore has the potential for the direct loss of bats.

**Why impacts would occur:** The removal of vegetation and trees will potentially result in the loss of foraging habitat for bats. Construction activities will temporarily increase the disturbance levels as well as human activity in the Project area. Disturbances related to bat habitat may have impacts to not only their roosts but their source of food. For example, “Encroachment of urban development and agriculture into areas of native vegetation likely alters the composition and abundance of insect prey in an area and may affect the ability of Townsend’s big-eared bat to find adequate prey.” (Gruver, J.C., 2006). Development activities may impact any bat species, including the Townsend’s big-eared bat, that could be within the Project boundary or its vicinity.

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**Evidence impacts would be significant:** Bats are considered non-game mammals and are afforded protection by state law from take and/or harassment, (Fish & G. Code, § 4150; Cal. Code of Regs, § 251.1). Although the Townsend’s big-eared bat is the species in question, it is important to remember that there are many bat species, for example the western yellow bat, that can be found year-round in urban areas throughout the south coast region (Miner & Stokes, 2005). Several bat species are considered California Species of Special Concern and meet the CEQA definition of rare, threatened or endangered species (CEQA Guidelines, § 15065). Take of California Species of Special Concern could require a mandatory finding of significance by the LVMWD (CEQA Guidelines, § 15065).

**Recommended Potentially Feasible Mitigation Measure(s):**

**Mitigation Measure #1:** Prior to construction activities, CDFW recommends bat surveys be conducted by a qualified bat specialist to determine baseline conditions within the Project area and within a 500-foot buffer. CDFW recommends the use of acoustic recognition technology to maximize detection of bat species to minimize impacts to sensitive bat species. LVMWD should document the presence of any bats and include species specific mitigation measures, such as avoiding roosting season for that species, to reduce impacts to below a level of significance.

**Recommendation #2:** In addition, an analysis of the potential significant effects of the proposed Project on the species (CEQA Guidelines §15125). The analysis should identify bat species, identify the location of potential roosts and foraging areas, and their proximity to

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disturbance areas. The analysis should also describe if Project activities will disturb these areas, either directly or indirectly, through ground disturbing activities, deconstruction activities, or vegetation removal.

**Comment #4: Impacts to Reptile California Species of Special Concern**

**Issue:** The BRR states, “the special-status species that could be directly impacted include potentially occurring land dwelling animals, including the coastal whiptail, California glossy snake, San Diego mountain kingsnake, coast patch-nosed snake, and coast horned lizard.” The coastal whiptail (*Aspidoscelis tigris stejnegeri*), California glossy snake (*Arizona elegans occidentalis*), San Diego mountain king snake (*Lampropeltis zona pulchra*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), and coast horned lizard (*Phrynosoma blainvillii*) are all designated as California Species of Special Concern .

**Specific impact:** Project ground disturbing activities such as grading and grubbing may result in habitat destruction, causing the death or injury of adults, juveniles, eggs, or hatchlings. In addition, the Project may remove habitat by eliminating native vegetation that may support essential foraging and breeding habitat.

**Why impact would occur:** Project implementation includes grading, vegetation clearing, and other activities that may result in direct mortality, population declines, or local extirpation of Special Status reptile and mammal species.

**Evidence impact would be significant:** CEQA provides protection not only for state and federally listed species, but for any species including but not limited to California Species of Special Concern which can be shown to meet the criteria for State listing. These Species of Special Concern meet the CEQA definition of rare, threatened or endangered species (CEQA Guidelines, § 15065). Take of Species of Special Concern could require a mandatory finding of significance by the LVMWD (CEQA Guidelines, § 15065).

**Recommended Potentially Feasible Mitigation Measure(s):**

**Mitigation Measure #1:** Due to potentially suitable habitat within the Project site, prior to vegetation removal and/or grading, qualified biologists familiar with the reptile and mammal species behavior and life history should conduct specialized surveys to determine the presence/absence of Species of Special Concern. Surveys should be conducted during active season when the reptiles are most likely to be detected. Coastal whiptail are diurnal (activity peaking in late morning) and active from March to October; California glossy snake are nocturnal and active February to November (peaking in May); San Diego mountain kingsnake are diurnal and crepuscular and are generally active mid-March to mid-October (Stebbins, 1954); coast patch-nosed snake are diurnal and are generally active in spring and early summer; coast horned lizard are active February to November and are diurnal in the spring and crepuscular in summer and fall (Thomson, R.C. et al., 2016). Survey results, including negative findings, should be submitted to CDFW for review 2 weeks prior to initiation of Project activities.

**Mitigation Measure #2:** To further avoid direct mortality, CDFW recommends that a qualified biological monitor approved by CDFW be on-site during ground and habitat disturbing activities to move out of harm’s way special status species that would be injured or killed by grubbing or Project-related grading activities. It should be noted that the temporary relocation of on-site wildlife does not constitute effective mitigation for the purposes of offsetting Project impacts

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associated with habitat loss. If the Project requires species to be removed, disturbed, or otherwise handled, we recommend that the Project clearly identify that the designated entity should obtain all appropriate state and federal permits.

**Mitigation Measure #3:** Scientific Collecting Permit – CDFW has the authority to issue permits for the take or possession of wildlife, including mammals; birds, nests, and eggs; reptiles, amphibians, fish, plants; and invertebrates (Fish & G. Code, §§ 1002, 1002.5, 1003). Effective October 1, 2018, a Scientific Collecting Permit is required to monitor project impacts on wildlife resources, as required by environmental documents, permits, or other legal authorizations; and, to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with otherwise lawful activities (Cal. Code Regs., tit. 14, § 650). Please visit CDFW's [Scientific Collection Permits](#) webpage for information (CDFW 2020c).

Pursuant to the [California Code of Regulations, title 14, section 650](#), the LVMWD/qualified biologist must obtain appropriate handling permits to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with Project construction and activities.

#### **Comment #5: Tree Removal**

**Issue:** The MND indicates tree removal during ground and vegetation disturbing activities. CDFW is concerned that the trees to be removed have not been identified, nor have the number of trees been indicated. In addition, an investigation has not taken place to identify the potential for tree pests.

**Specific Impact:** Project activities that involve removal of trees have the potential to result in the spread of tree insect pests and disease into areas not currently exposed to these stressors. This could result in expediting the loss of trees in California which may support a high biological diversity including special status species.

**Why impact would occur:** Trees will be removed and presumably hauled to off-site locations for disposal, thereby exposing off-site tree species to potential infestation and disease.

**Evidence Impact would be significant:** The Project may result in an adverse effect, either directly or through habitat modifications, by exposing other habitats to insect and/or disease pathogens. Exposure to insect and/or disease pathogens may have a substantial adverse effect on any sensitive natural identified in local or regional plans, policies, and regulations or by the CDFW or U.S. Fish and Wildlife Service.

#### **Recommended Potentially Feasible Mitigation Measure(s):**

**Mitigation Measure #1:** CDFW recommends replacing all trees removed as a result of the proposed work activities at least a 1:1 ratio with native trees.

**Mitigation Measure #2:** To reduce impacts to less than significant the final environmental document should describe an infectious tree disease management plan and how it will be implemented to avoid significant impacts under CEQA. All trees identified for removal resulting from the Project should be inspected for contagious tree diseases including but not limited to: [thousand canker fungus](#) (*Geosmithia morbida*), [Polyphagous Shot Hole Borer](#) (*Euwallacea spp.*), and [goldspotted oak borer](#) (*Agrilus auroguttatus*) (TCD 2020; UCANR 2020;

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UCIPM 2013). To avoid the spread of infectious tree diseases, diseased trees should not be transported from the Project site without first being treated using best available management practices relevant for each tree disease observed.

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**Filing Fees**

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

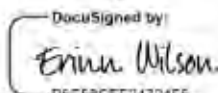
2-I

**Conclusion**

We appreciate the opportunity to comment on the Project to assist the LVMWD in adequately analyzing and minimizing/mitigating impacts to biological resources. CDFW requests an opportunity to review and comment on any response that the LVMWD has to our comments and to receive notification of any forthcoming hearing date(s) for the Project. Questions regarding this letter and further coordination on these issues should be directed to Felicia Silva, Environmental Scientist, at [Felicia.Silva@wildlife.ca.gov](mailto:Felicia.Silva@wildlife.ca.gov) or (562) 430-0098.

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Sincerely,

DocuSigned by:  
  
Erinn Wilson  
Environmental Program Manager I  
South Coast Region

Ec: CDFW

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- State Clearinghouse - [state.clearinghouse@opr.ca.gov](mailto:state.clearinghouse@opr.ca.gov)

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**GAVIN NEWSOM, Governor**  
**CHARLTON H. BONHAM, Director**



CDFW recommends the following language to be incorporated into a future environmental document for the Project.

<b>Biological Resources</b>			
	<b>Mitigation Measure</b>	<b>Timing</b>	<b>Responsible Party</b>
<b>MM-BIO-1-Nesting Birds</b>	To protect nesting birds that may occur on site or adjacent to the Project boundary, no construction shall occur from February 15 (January 1 for raptors) through August 31.	Prior to Construction	Las Virgenes Municipal Water District
<b>MM-BIO-2-Nesting Birds</b>	If avoidance is not feasible, a qualified biologist shall complete a survey for nesting bird activity within a 500-foot radius of the construction site. The nesting bird surveys shall be conducted at appropriate nesting times and concentrate on potential roosting or perch sites. CDFW concurs with the frequency of survey events as stated in BIO-1 of the MND and that they should be conducted prior to the beginning of any Project-related activity likely to impact raptors and migratory songbirds, for the entire Project site. If Project activities are delayed or suspended for more than 7 days during the breeding season, repeat the surveys. If nesting raptors and migratory songbirds are identified, the following minimum no-disturbance buffers be implemented: 300 feet around active passerine (perching birds and songbirds) nests, 500 feet around active non-listed raptor nests and 0.5 mile around active listed bird nests. These buffers shall be maintained until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. These buffers shall be increased if needed to protect the nesting birds.	Prior to Construction	Las Virgenes Municipal Water District

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	<p>The temporary halt of Project activities within nesting buffers during nesting season does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. Additional mitigation will be necessary to compensate for the removal of nesting habitat within the Project site based on acreage of impact and vegetation composition. CDFW should be consulted to determine proper mitigation for impacts to occupied habitat depending on the status of the bird species. Mitigation ratios will increase with the occurrence of a California Species of Special Concern and will further increase with the occurrence of a CESA-listed species.</p>		
<b>MM-BIO-3-Nesting Birds</b>	<p>Survey the entire development Project site to determine the potential distribution of fully protected species and assure that “take” will be avoided during development project construction. The environmental document shall also include measures to preclude “take” on a project site during operations and from temporary traffic and human presence increased related to construction. The environmental document shall analyze the potential “take” as a result of habitat modification. If a development project’s modification of occupied habitat causes mortality of individuals, then the development project will be considered the cause of the take. Therefore, to avoid take, construction and operation activities shall avoid all raptors by a distance of no less than the distance that the specific species are known or expected to travel within their home range, based on telemetry, mark-recapture, or other data.</p>	Prior to Construction	Las Virgenes Municipal Water District
<b>MM-BIO-4-Crotch’s bumble bee</b>	<p>Due to potentially suitable habitat within the Project site, within one year prior to vegetation removal and/or grading, a qualified entomologist familiar with the species behavior and life history shall conduct surveys to</p>	Prior to Construction	Las Virgenes Municipal Water District

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	determine the presence/absence of Crotch's bumble bee. Surveys shall be conducted during flying season when the species is most likely to be detected above ground, between March 1 to September 1 (Thorp et al. 1983). Survey results including negative findings shall be submitted to CDFW prior to initiation of Project activities. If "take" or adverse impacts to Crotch's bumble bee cannot be avoided either during Project activities or over the life of the Project, LVMWD must consult CDFW to determine if a CESA incidental take permit is required (pursuant to Fish & Game Code, § 2080 et seq.).		
<b>MM-BIO-5-Bat Species</b>	Bat surveys shall be conducted by a qualified bat specialist to determine baseline conditions within the Project and within a 500-foot buffer and analyze the potential significant effects of the proposed Project on the species (CEQA Guidelines §15125). The DEIR will include the use of acoustic recognition technology to maximize detection of bat species to minimize impacts to sensitive bat species. The DEIR shall document the presence of any bats and include species specific mitigation measures to reduce impacts to below a level of significance.	Prior to Construction	Las Virgenes Municipal Water District
<b>MM-BIO-6-Species of Special Concern</b>	Due to potentially suitable habitat within the Project site, prior to vegetation removal and/or grading, qualified biologists familiar with the reptile and mammal species behavior and life history shall conduct specialized surveys to determine the presence/absence of Species of Special Concern. Surveys shall be conducted during active season when the reptiles are most likely to be detected. Coastal whiptail are diurnal (activity peaking in late morning) and active from March to October; California glossy snake are nocturnal and active February to November (peaking in May); San Diego mountain kingsnake are diurnal and crepuscular and are	Prior to Construction	Las Virgenes Municipal Water District

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	generally active mid-March to mid-October (Stebbins, 1954); coast patch-nosed snake are diurnal and are generally active in spring and early summer; coast horned lizard are active February to November and are diurnal in the spring and crepuscular in summer and fall (Thomson, R.C. et al., 2016). Survey results, including negative findings, shall be submitted to CDFW for review 2 weeks prior to initiation of Project activities.		
<b>MM-BIO-7-Out of Harm's Way</b>	To further avoid direct mortality, a qualified biological monitor approved by CDFW be on-site during ground and habitat disturbing activities to move out of harm's way special status species that would be injured or killed by grubbing or Project-related grading activities. It shall be noted that the temporary relocation of on-site wildlife does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. If the Project requires species to be removed, disturbed, or otherwise handled, we recommend that the Project clearly identify that the designated entity shall obtain all appropriate state and federal permits.	Prior to Construction and During Construction	Las Virgenes Municipal Water District
<b>MM-BIO-8-Scientific Collecting Permit</b>	CDFW has the authority to issue permits for the take or possession of wildlife, including mammals; birds, nests, and eggs; reptiles, amphibians, fish, plants; and invertebrates (Fish & G. Code, §§ 1002, 1002.5, 1003). Effective October 1, 2018, a Scientific Collecting Permit is required to monitor project impacts on wildlife resources, as required by environmental documents, permits, or other legal authorizations; and, to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with otherwise lawful activities (Cal. Code Regs., tit. 14, § 650). Please visit CDFW's <a href="#">Scientific Collection Permits</a> webpage for information (CDFW 2020c).	Prior to Construction	Las Virgenes Municipal Water District

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	Pursuant to the <a href="#">California Code of Regulations, title 14, section 650</a> , the LVMWD/qualified biologist will obtain appropriate handling permits to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with Project construction and activities.		
<b>MM-BIO-9-Tree Removal</b>	All trees removed as a result of the proposed work activities shall be replaced with at least a 1:1 ratio with native trees.	Prior to Construction	Las Virgenes Municipal Water District
<b>MM-BIO-10-Tree Removal</b>	To reduce impacts to less than significant the final environmental document shall describe an infectious tree disease management plan and how it will be implemented to avoid significant impacts under CEQA. All trees identified for removal resulting from the Project shall be inspected for contagious tree diseases including but not limited to: <a href="#">thousand canker fungus</a> ( <i>Geosmithia morbida</i> ), <a href="#">Polyphagous Shot Hole Borer</a> ( <i>Euwallacea spp.</i> ), and <a href="#">goldspotted oak borer</a> ( <i>Agrilus auroguttatus</i> ) (TCD 2020; UCANR 2020; UCIPM 2013). To avoid the spread of infectious tree diseases, diseased trees shall not be transported from the Project site without first being treated using best available management practices relevant for each tree disease observed.	Prior to Construction	Las Virgenes Municipal Water District

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**RESPONSES TO COMMENT LETTER 2 – CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (OCTOBER 5, 2020)****Comment 2-A:**

CDFW is California’s Trustee Agency for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State [Fish & G. Code, §§ 711.7, subdivision (a) & 1802; Public Resources Code, § 21070; California Environmental Quality Act (CEQA) Guidelines, § 15386, subdivision (a)]. CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect state fish and wildlife resources. CDFW is also submitting comments as a Responsible Agency under CEQA (Public Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in “take”, as defined by state law, of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), or state-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish & G. Code, §1900 et seq.) authorization as provided by the applicable Fish and Game Code will be required.

**Response to Comment 2-A:**

The commenter’s discussion of the CDFW’s role as a Trustee Agency and also a Responsible Agency under CEQA as well as regulatory authority is noted. No new environmental issues are raised in this comment.

**Comment 2-B:**

**Objective:** The proposed Project will include the replacement of an existing 0.4 million-gallon (MG) water tank with a 1 MG water tank. The Project would require grading of approximately 0.21 acres, primarily on land already developed where the current water tank to be replaced is located. A further 0.57 acres adjacent to the access road would be temporarily impacted for staging of equipment and materials for Project construction. This replacement will include the installation of additional pumps and associated equipment at an existing pumping station, approximately 1.2 miles southwest of tank site.

**Location:** The water tanks site is located approximately 500 feet north of the SR-118 freeway, and approximately 0.5 mile west of the Topanga Canyon Road (SR-27) / SR-118 freeway interchange, in an unincorporated portion of Los Angeles County, northwest of the San Fernando Valley. The Twin Lakes Pump Station is located approximately 4,600 feet south of the SR-118 Freeway, within the City of Los Angeles boundary, in the northwest portion of the San Fernando Valley, approximately 0.4 miles northwest of the western terminus of Devonshire Street.

**Response to Comment 2-B:**

This comment’s summary of the Project’s objective and location are noted. No new environmental issues are raised in this comment.

**Comment 2-C:**

CDFW offers the comments and recommendations below to assist Las Virgenes Municipal Water District (LVMWD) in adequately identifying, avoiding, and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. CDFW recommends the measures or revisions below be included in a science based monitoring program that contains adaptive management strategies as part of the Project's CEQA mitigation, monitoring and reporting program (Public Resources Code, § 21081.6 and CEQA Guidelines, § 15097).

**Response to Comment 2-C:**

This comment is noted. No new environmental issues are raised in this comment.

**Comment 2-D:**

Comment #1: Impacts to Nesting Birds

Issue: The BRR states that, "If vegetation clearing (including tree pruning and removal) or other Project construction is to be initiated during the bird-breeding season (February 1 through August 31), two (2) preconstruction/grading surveys shall be conducted by a qualified ornithologist (a person with a biology degree and/or established skills in bird recognition)." While CDFW agrees that a qualified individual should conduct the surveys, there is concern over the lack of primary avoidance measures. In addition, the occurrence of oak woodland and other vegetation communities indicate the potential for nesting within and around the Project vicinity.

Specific impacts: Construction during the breeding season of nesting birds could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment in trees directly adjacent to the Project boundary. The Project could also lead to the loss of foraging habitat for potentially sensitive bird species.

Why impact would occur: Impacts to nesting birds could result from ground disturbing and construction activities. Project disturbance activities could result in mortality or injury to nestlings, as well temporary or long-term loss of suitable foraging habitats. Construction during the breeding season of nesting birds could result in the incidental loss of breeding success or otherwise lead to nest abandonment on site and around the Project vicinity.

Evidence impact would be significant: The loss of occupied habitat or reductions in the number of rare bird species, either directly or indirectly through nest abandonment or reproductive suppression, would constitute a significant impact absent appropriate mitigation. Furthermore, nests of all native bird species are protected under state laws and regulations, including Fish and Game Code sections 3503 and 3503.5. Fully protected status precludes CDFW from authorizing any amount of incidental take or intentional take to meet any project mitigation requirement. When projects show the potential to cause take of fully protected species, CDFW advises on appropriate measures to avoid take. Given the legal status of fully protected animals, take avoidance measures should meet very high standards of effectiveness, substantially greater than the measures to minimize take required under Incidental Take Permits.

Recommended Potentially Feasible Mitigation Measure(s):

Mitigation Measure #1: To protect nesting birds that may occur on site or adjacent to the Project boundary, CDFW recommends that no construction should occur from February 15 (January 1 for raptors) through August 31.

Mitigation Measure #2: If avoidance is not feasible, a qualified biologist should complete a survey for nesting bird activity within a 500-foot radius of the construction site. The nesting bird surveys should be conducted at appropriate nesting times and concentrate on potential roosting or perch sites. CDFW concurs with the frequency of survey events as stated in BIO-1 of the MND and that they should be conducted prior to the beginning of any Project-related activity likely to impact raptors and migratory songbirds, for the entire Project site. If Project activities are delayed or suspended for more than 7 days during the breeding season, repeat the surveys. If nesting raptors and migratory songbirds are identified, CDFW recommends the following minimum no-disturbance buffers be implemented: 300 feet around active passerine (perching birds and songbirds) nests, 500 feet around active non-listed raptor nests and 0.5 mile around active listed bird nests.

These buffers should be maintained until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. These buffers should be increased if necessary, to protect the nesting birds.

It should be noted that the temporary halt of Project activities within nesting buffers during nesting season does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. Additional mitigation would be necessary to compensate for the removal of nesting habitat within the Project site based on acreage of impact and vegetation composition. CDFW should be consulted to determine proper mitigation for impacts to occupied habitat depending on the status of the bird species. Mitigation ratios would increase with the occurrence of a California Species of Special Concern and would further increase with the occurrence of a CESA-listed species.

Mitigation Measure #3: CDFW recommends surveying the entire development project site to determine the potential distribution of fully protected species and assure that “take” will be avoided during development project construction. The environmental document should also include measures to preclude “take” on a development project site during operations and from temporary traffic and human presence increased related to construction. The environmental document should analyze the potential “take” as a result of habitat modification. If a development project’s modification of occupied habitat causes mortality of individuals, then the development project will be considered the cause of the take. Therefore, to avoid take, construction and operation activities should avoid all raptors by a distance of no less than the distance that the specific species are known or expected to travel within their home range, based on telemetry, mark-recapture, or other data.

**Response to Comment 2-D:**

Mitigation Measure BIO-1 will be revised to update the start date of nesting season, specify a raptor nesting season, include a survey area radius, and include a protocol for resumption of surveys if there is a suspension of activities as follows:



**BIO-1:** Project activities, including but not limited to site preparation, construction, or fuel modification activities, with potential to disturb suitable bird-nesting habitat shall be prohibited within the breeding/nesting season for native bird species (February 15 through August 31) and raptors (January 1 through August 31). If Project activities cannot feasibly avoid the breeding bird season, thirty days prior to the disturbance of suitable nesting habitat, the applicant shall arrange for weekly bird surveys to detect any protected native birds in the habitat to be removed and ~~any other such habitat within properties adjacent to the Project~~ potential roosting or perch sites within 500-feet of the construction site, as access to ~~adjacent areas~~ allows. A qualified biologist with experience in conducting breeding bird surveys shall conduct the surveys. The surveys shall continue on a weekly basis with the last survey being conducted no more than three (3) days prior to the initiation of clearance/construction work. If Project activities are delayed or suspended for more than 7 days during the breeding season, additional surveys shall be conducted.

The field surveys shall determine if active nests of any bird species protected by the state or federal Endangered Species Acts, Migratory Bird Treaty Act, and/or the California Fish and Game Code Sections 3503, 3503.5, or 3511 are present at the limits of disturbance or within 500 feet of the limits of disturbance. The findings of these surveys shall be reported to the lead agency prior to initiation of vegetation clearance.

If active nests are identified during pre-construction surveys or discovered after construction has started, they will be protected with spatial buffers. Buffer size will be determined on a case-by-case basis by a qualified biologist based on site conditions, the species' life history and disturbance tolerance, the nest's distance to construction activities, and the type of construction ongoing in the vicinity of the nest. Buffers will be clearly delineated (e.g., using rope, flagging, signage); or they may also be defined by natural or man-made features that are deemed sufficient to prohibit access (e.g., tree rows, fences). Buffers will remain in place and will be monitored and maintained regularly during the nesting season or until the biologist determines that the young have fledged or the nest failed or construction has been completed. A final report of nest monitoring will be provided to the lead agency upon conclusion of grading activities.

Regarding this comment's recommended Mitigation Measure #2, in general nesting habitat is not considered a special status biological resource under CEQA unless the habitat is associated with a special-status wildlife species, or is a special status vegetation community. The biological surveys for the project determined that no special-status plant species were observed during the surveys of the site, and no sensitive plant communities were observed. While there is potential for two special status bird species (southern California rufous-crowned sparrow, and white-tailed kite) to occur temporarily, the habitats within the impact area are not of particular importance to the survival or life cycle of any of the above-mentioned special-status species. The proposed replacement of an existing tank with a new water tank would result in a relatively small amount of additional vegetation disturbance (less than 0.03 acre) beyond the existing pavement edge. Additionally, the temporary staging area would have all construction equipment and materials

removed after completion of the project, and the staging area would be hydroseeded with a native mix to hasten recovery of any temporary vegetation disturbance there.

The IS/MND Section 2.3, Project Characteristics text will be clarified to note the measured area of vegetation disturbance and the project plans to hydroseed the temporary staging area as follows:

Prior to construction of the new tank, the building pad would be graded down approximately 6 feet from the existing elevation to approximately match the finished floor elevation of the existing 1,600,000-gallon water tank that would be retained. As grading activities would primarily occur within the existing water tank site, which currently is developed with a water tank and surrounding pavement and includes a barren/sparsely vegetated rocky slope between existing water tanks (see Vegetation Map in Appendix B.1 Figure 2), project grading of vegetated areas would be limited to approximately 0.03 acres total beyond the existing paved area along the north and south sides of the water tank site. Grading activities would require export of approximately 3,000 cubic yards of soil/rock material, which would be hauled approximately fifty miles to a disposal site in Irwindale, California. To provide a 15-foot wide access drive around the perimeter of the new tank, the graded area and perimeter fence would extend slightly beyond the existing graded area and fenceline. During construction, a staging area for storing equipment and materials would be established along the dirt access road as shown in Figure 2-2, which is approximately the same area where similar staging occurred for construction of the existing 1,600,000-gallon tank being retained on the site. Following construction activities, all equipment and construction materials would be removed, and the temporary staging area will be hydroseeded with a mix of native species to hasten revegetation and recovery of temporary vegetation disturbance.

Similarly, the IS/MND Section 5.4 Biological Resources text will be clarified as follows:

This section is based on the Biological Resources Letter prepared by Envicom Corporation (January 16, 2020), and a Rare Plant Survey Report (Spring Survey) prepared by Envicom Corporation (June 25, 2020), which are included as **Appendix B.1 and Appendix B.2**, respectively. The Rare Plant Survey fieldwork was conducted in May 2020, during the peak blooming period for special-status plant species with potential to occur. As the Pump Station upgrades would occur within the confines of the existing Pump Station, which is fenced, and primarily paved or barren ground, that component of the Project would have no impact on biological resources, and therefore, this analysis will focus on the undeveloped water tank site.

Project grading activities would primarily occur within the existing water tank site, which currently is developed with a water tank and surrounding pavement and includes a barren/sparsely vegetated rocky slope between existing water tanks (see Vegetation Map in Appendix B.1 Figure 2). Grading of the water tank site would extend approximately 10 to 15 feet beyond the north and south sides of the existing pavement, within vegetated areas totaling approximately 0.03 acres, which would be paved by the project. During construction, a staging area for storing equipment and materials would be established along the dirt access road as shown in Figure 2-2, which would consist of approximately 0.57 acres, and is approximately the same area where similar staging occurred for

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construction of the existing 1,600,000-gallon tank being retained on the site. Following construction activities, all equipment and construction materials would be removed, and the temporary staging area will be hydroseeded with a mix of native species to hasten revegetation and recovery of temporary vegetation disturbance.

As the project would result in a minimal permanent loss of vegetation, it would not 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; or substantially reduce the number or restrict the range of an endangered, rare or threatened species. Therefore, as concluded in the IS/MND, potential impacts would be less than significant. Impacts to nesting bird habitat beyond the potential to impact individual nesting birds would not be considered a significant impact and does not warrant compensatory mitigation.

Regarding this comment's recommendation of surveying the entire development project site to determine the potential distribution of fully protected species and assure that "take" will be avoided during construction, as discussed in the IS/MND and Appendices B.1 and B.2, biological surveys for the project did not observe special-status wildlife species, including any designated as California fully protected species. The IS/MND recognizes that the potential for occurrence of any special-status species is primarily due to the presence of suitable habitats adjacent to or in the vicinity of the site, rather than the quality or suitability of the habitat at the currently developed water tank site itself, and that habitats within the impact area are not of particular importance to the survival or life cycle of any of the above-mentioned special-status species. Nonetheless, in consideration of this comment, the District will impose a pre-construction survey condition, and the IS/MND Section 5.4 discussion of Special-Status Wildlife Species will be clarified as follows:

Although the project's permanent removal of less than 0.03 acre of vegetation beyond the existing pavement area would not result in a significant impact regarding special-status species, in consideration of comments provided by CDFW, the LVMWD will impose the following conditions on the project:

**Pre-Construction Survey Condition**

Prior to commencement of ground or vegetation disturbing activities at the project site, a qualified biologist shall conduct two surveys for special-status wildlife species. The first survey shall be conducted no more than fourteen (14) days prior to commencement of project activities and the second survey shall be conducted no more than three (3) days prior to the commencement of project activities. The survey shall incorporate methods to detect the special-status wildlife species that could potentially occur at the site. To the extent feasible, special-status species shall be avoided. If avoidance is not feasible, the species shall be captured and transferred to an appropriate habitat and location where it would not be harmed by project activities. Should a State or federally listed species be found, activities shall be postponed until the Applicant consults with the CDFW and/or USFWS, and obtains any necessary take authorization or permit approvals. The biologist shall hold the requisite permits for the capture and handling of the species. If a special-status wildlife species is found during the surveys, the biologist shall monitor all ground and vegetation disturbing activities at the project site throughout site preparation activities.

Operation of the proposed tank facility would involve periodic access to the facility for inspection or maintenance of the tank and associated infrastructure, and would not substantially differ in frequency compared to the periodic inspections and maintenance that already occurs under existing conditions. As no substantial change in operations of the water tank facility would occur as a result of the project, potential impacts to special-status wildlife species during operations would be less than significant.

**Comment 2-E:**

Comment #2: Impacts to Candidate Endangered Species – Crotch’s Bumble Bee

Issue: Regarding Crotch’s bumble bee (*Bombus crotchii*), Attachment 4 (Special-Status Plant and Wildlife Species Potential for Occurrence) in the BRR states, “Too little is known of the biology of this species to speculate whether it is present but there is limited suitable habitat within the study area. Limited food plants were located within the development area.” CDFW is concerned there has been no attempt to survey for this special status species that has the possibility to be on site. In addition, survey efforts would inform LVMWD if any mitigation for this species may be necessary.

Specific Impact: Project ground disturbing activities such as grading and grubbing may result in crushing or filling of active bee colonies, causing the death or injury of adults, eggs, and larvae. The Project may remove bee habitat by eliminating native vegetation that may support essential foraging habitat.

Why Impact would occur: Impacts to Crotch’s bumble bee could result from ground disturbing activities. Project disturbance activities could result in mortality or injury to hibernating bees, as well as temporary or long-term loss of suitable foraging habitats. Construction during the breeding season of bees could result in the incidental loss of breeding success or otherwise lead to nest abandonment.

Evidence Impact would be significant: On June 12, 2019, the California Fish and Game Commission accepted a petition to list the crotch bumble bee as endangered under the California Endangered Species Act (“CESA”), determining the listing “may be warranted” and advancing the species to the candidacy stage of the CESA listing process. The Project’s potential to substantially reduce and adversely modify habitat for Crotch’s bumble bee, reduce and potentially seriously impair the viability of populations of Crotch’s bumble bee, and reduce the number and range of the species while taking into account the likelihood that special status species on adjacent and nearby natural lands rely upon the habitat that occurs on the proposed Project site.

Recommended Potentially Feasible Mitigation Measure(s):

Mitigation Measure: Due to potentially suitable habitat within the Project site, within one year prior to vegetation removal and/or grading, a qualified entomologist familiar with the species behavior and life history should conduct surveys to determine the presence/absence of Crotch’s bumble bee. Surveys should be conducted during flying season when the species is most likely to be detected above ground, between March 1 to September 1 (Thorp et al. 1983). Survey results including negative findings should be submitted to CDFW prior to initiation of Project activities. If “take” or adverse impacts to Crotch’s bumble bee cannot be avoided either during Project activities or over the life of the Project, LVMWD must consult CDFW to determine if a CESA incidental take permit is required (pursuant to Fish & Game Code, § 2080 et seq.).

**Response to Comment 2-E:**

As indicated in the potential for occurrence analysis within the Biology Report (Appendix B.1), Crotch's bumble bee is presumed absent and there is limited suitable habitat present (unpaved/undeveloped area) within the water tank site that would be subject to long-term loss. The proposed project would result in redevelopment of the existing tank site with a relatively small amount of additional vegetation disturbance (less than 0.03 acre) beyond the existing pavement edge, within areas that are not of particular importance to their survival or life cycle. Additionally, the project would remove all equipment and construction materials from the temporary staging area, and hydroseed that area with a native mix to hasten revegetation and recovery following construction. See the noted clarifications of the IS/MND discussed in the response to Comment 2-D. Following completion, the water tank site would continue to operate as it currently does under existing conditions, which would include periodic inspection and maintenance visits. This would not be a changed condition regarding operations.

Accordingly, the MND reaches the conclusion that the proposed project would result in a less than significant impact. However, as discussed in the response to Comment 2-D, the District would condition the project to conduct a pre-construction survey for special status species, which would include Crotch's bumble bee or their sign, including but not limited to inspection of any plant species within the disturbance area that represent potential food plant genera that is associated with Crotch's bumble bee, which as indicated in the IS/MND Appendix B.1 may include individuals of *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*. If a colony of bumble bees are found to be present within the disturbance area, the Applicant shall consult with CDFW to determine whether Take authorization for Crotch's bumble bee is required. If an active colony of this species is documented within the project disturbance area, the project would be required to obtain Take authorization pursuant to existing regulations and CDFW requirements prior to the start of vegetation or ground disturbance activities. If no active colony of any bumble bee species is observed within the site during the pre-construction survey, no further action would be warranted regarding this comment for compliance with CEQA.

**Comment 2-F:**

Comment #3: Impacts to Bat Species, including California Species of Special Concern

Issue: The Project includes activities that will result in the removal of trees and vegetation that may provide foraging habitat for bats. In addition, Attachment 4 (Special-Status Plant and Wildlife Species Potential for Occurrence) in the BRR identifies the hoary bat (*Lasiurus cinereus*), the Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), western mastiff bat (*Eumops perotis californicus*) and the pallid bat (*Antrozous pallidus*) (the big-eared, spotted, western mastiff, western red, and pallid bats are designated California Species of Special Concern), as potentially present on site. CDFW is concerned that the [sic] is no mitigation for potential impacts to a number of bat species that may occur on site.

Specific impacts: Project activities include the removal of trees, vegetation, and/or structures that may provide foraging habitat and therefore has the potential for the direct loss of bats.

Why impacts would occur: The removal of vegetation and trees will potentially result in the loss of foraging habitat for bats. Construction activities will temporarily increase the disturbance levels as well as human activity in the Project area. Disturbances related to bat habitat may have impacts to not only their roosts but their source of food. For example, "Encroachment of urban development and agriculture into areas of native vegetation likely alters the composition and

abundance of insect prey in an area and may affect the ability of Townsend's big-eared bat to find adequate prey." (Gruver, J.C., 2006). Development activities may impact any bat species, including the Townsend's big-eared bat, that could be within the Project [sic] boundary or its vicinity.

Evidence impacts would be significant: Bats are considered non-game mammals and are afforded protection by state law from take and/or harassment, (Fish & G. Code, § 4150; Cal. Code of Regs, § 251.1). Although the Townsend's big-eared bat is the species in question, it is important to remember that there are many bat species, for example the western yellow bat, that can be found year-round in urban areas throughout the south coast region (Miner & Stokes, 2005). Several bat species are considered California Species of Special Concern and meet the CEQA definition of rare, threatened or endangered species (CEQA Guidelines, § 15065). Take of California Species of Special Concern could require a mandatory finding of significance by the LVMWD (CEQA Guidelines, § 15065).

**Recommended Potentially Feasible Mitigation Measure(s):**

**Mitigation Measure #1:** Prior to construction activities, CDFW recommends bat surveys be conducted by a qualified bat specialist to determine baseline conditions within the Project area and within a 500-foot buffer. CDFW recommends the use of acoustic recognition technology to maximize detection of bat species to minimize impacts to sensitive bat species. LVMWD should document the presence of any bats and include species specific mitigation measures, such as avoiding roosting season for that species, to reduce impacts to below a level of significance.

**Recommendation #2:** In addition, an analysis of the potential significant effects of the proposed Project on the species (CEQA Guidelines §15125). The analysis should identify bat species, identify the location of potential roosts and foraging areas, and their proximity to disturbance areas. The analysis should also describe if Project activities will disturb these areas, either directly or indirectly, through ground disturbing activities, deconstruction activities, or vegetation removal.

**Response to Comment 2-F:**

Regarding the comment's suggestion that the project would result in encroachment of urban development in the area, the site is currently occupied by two water tanks, one of which would be replaced by a slightly larger water tank on the same site as the existing tank to be removed. Therefore, the project would not alter the existing use nor increase urban development in the area of the existing tanks. No additional housing, roads, or other urban development on the site or in the near vicinity are proposed that would substantially affect the availability of prey for bats. Therefore, this portion of the comment would not be applicable to the proposed project.

Regarding the suggestion that the project would result in the loss of foraging habitat for bats, as described in the IS/MND, the site is currently occupied by two water tanks surrounded by pavement. An existing dirt road that provides access to the site would be retained as an unpaved road allowing access during construction and for periodic inspection and maintenance during operations. The temporary unpaved equipment staging area along the dirt road, which has previously been used for similar use during construction of an existing water tank on the site, would have all equipment and materials removed following construction and would not constitute a long-term loss of foraging habitat. As discussed in the response to comment 2-E, the project would result in an increase in the existing developed/paved area within the existing water tank site by less than 0.03 (three hundredths) of an acre. Additionally, the project would remove all

equipment and construction materials from the temporary staging area, and hydroseed that area with a native mix to hasten revegetation and recovery following construction. See the noted clarifications of the IS/MND discussed in the response to Comment 2-D. Following completion, the water tank site would continue to operate as it currently does under existing conditions, which would include periodic inspection and maintenance visits. This would not be a changed condition regarding operations. As such, the project would not 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; or substantially reduce the number or restrict the range of an endangered, rare or threatened species, which could result in a significant impact to biological resources as defined by CEQA Guidelines Section 15065. Therefore, as concluded in the IS/MND impacts would be less than significant.

Although impacts would be less than significant under CEQA as concluded in the IS/MND, in consideration of this comment, in addition to the pre-construction survey condition discussed in Response to Comment 2-E, the District will also impose the following condition on the project's construction activities, which will be noted in the IS/MND Section 5.4 discussion of Special-Status Wildlife Species, as follows:

**Tree Removal Condition**

Any tree removal shall occur following a pre-construction survey by a qualified biologist to determine whether bats are present in the tree to be removed. Felling the tree will be accomplished by using heavy equipment to nudge the trees 2 or 3 times to activate any bats that may be occupying the trees so that they have an opportunity to leave, then notching trunks by chainsaw to ensure trees will not fall into the existing water tank, before pushing over or pulling down the trees using heavy equipment with chains, ropes, or similar method.

**Comment 2-G:**

Comment #4: Impacts to Reptile California Species of Special Concern

Issue: The BRR states, "the special-status species that could be directly impacted include potentially occurring land dwelling animals, including the coastal whiptail, California glossy snake, San Diego mountain kingsnake, coast patch-nosed snake, and coast horned lizard." The coastal whiptail (*Aspidoscelis tigris stejnegeri*), California glossy snake (*Arizona elegans occidentalis*), San Diego mountain king snake (*Lampropeltis zona pulchra*), coast patch-nosed snake (*Salvadora hexalepis virgulata*), and coast horned lizard (*Phrynosoma blainvillii*) are all designated as California Species of Special Concern.

Specific impact: Project ground disturbing activities such as grading and grubbing may result in habitat destruction, causing the death or injury of adults, juveniles, eggs, or hatchlings. In addition, the Project may remove habitat by eliminating native vegetation that may support essential foraging and breeding habitat.

Why impact would occur: Project implementation includes grading, vegetation clearing, and other activities that may result in direct mortality, population declines, or local extirpation of Special Status reptile and mammal species.

Evidence impact would be significant: CEQA provides protection not only for state and federally listed species, but for any species including but not limited to California Species of Special Concern which can be shown to meet the criteria for State listing. These Species of Special Concern meet the CEQA definition of rare, threatened or endangered species (CEQA Guidelines, § 15065). Take of Species of Special Concern could require a mandatory finding of significance by the LVMWD (CEQA Guidelines, § 15065).

**Recommended Potentially Feasible Mitigation Measure(s):**

**Mitigation Measure #1:** Due to potentially suitable habitat within the Project site, prior to vegetation removal and/or grading, qualified biologists familiar with the reptile and mammal species behavior and life history should conduct specialized surveys to determine the presence/absence of Species of Special Concern. Surveys should be conducted during active season when the reptiles are most likely to be detected. Coastal whiptail are diurnal (activity peaking in late morning) and active from March to October; California glossy snake are nocturnal and active February to November (peaking in May); San Diego mountain kingsnake are diurnal and crepuscular and are generally active mid-March to mid-October (Stebbins, 1954); coast patch-nosed snake are diurnal and are generally active in spring and early summer; coast horned lizard are active February to November and are diurnal in the spring and crepuscular in summer and fall (Thomson, R.C. et al., 2016). Survey results, including negative findings, should be submitted to CDFW for review 2 weeks prior to initiation of Project activities.

**Mitigation Measure #2:** To further avoid direct mortality, CDFW recommends that a qualified biological monitor approved by CDFW be on-site during ground and habitat disturbing activities to move out of harm's way special status species that would be injured or killed by grubbing or Project-related grading activities. It should be noted that the temporary relocation of on-site wildlife does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. If the Project requires species to be removed, disturbed, or otherwise handled, we recommend that the Project clearly identify that the designated entity should obtain all appropriate state and federal permits.

**Mitigation Measure #3:** Scientific Collecting Permit – CDFW has the authority to issue permits for the take or possession of wildlife, including mammals; birds, nests, and eggs; reptiles, amphibians, fish, plants; and invertebrates (Fish & G. Code, §§ 1002, 1002.5, 1003). Effective October 1, 2018, a Scientific Collecting Permit is required to monitor project impacts on wildlife resources, as required by environmental documents, permits, or other legal authorizations; and, to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with otherwise lawful activities (Cal. Code Regs., tit. 14, § 650). Please visit CDFW's Scientific Collection Permits webpage for information (CDFW 2020c). Pursuant to the California Code of Regulations, title 14, section 650, the LVMWD/qualified biologist must obtain appropriate handling permits to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with Project construction and activities.

**Response to Comment 2-G:**

The commenter states that ground disturbing activities such as grading and grubbing may result in habitat destruction, causing the death or injury of reptile California species of special concern. The MND acknowledges the potential for occurrence of many of these species is primarily due to the presence of suitable habitats adjacent to or in the vicinity of the site, rather than the quality or suitability of the habitat at the water tank site itself and/or the temporary staging area. The



available resources within the permanent and temporary impact area are not of particular importance to the survival or life cycle of any of the above-mentioned special-status species, such that minimal permanent loss of habitat (less than 0.03 acre) would have a significantly adverse effect on a population of these species. Additionally, the project would remove all equipment and construction materials from the temporary staging area, and hydroseed that area with a native mix to hasten revegetation and recovery following construction. See the noted clarifications of the IS/MND discussed in the response to Comment 2-D. Following completion, the water tank site would continue to operate as it currently does under existing conditions, which would include periodic inspection and maintenance visits. This would not be a changed condition regarding operations. However, as discussed in the response to Comment 2-D, the District would condition the project to conduct a pre-construction survey for species of special concern, which would include the reptile species mentioned in this comment.

**Comment 2-H:****Comment #5: Tree Removal**

**Issue:** The MND indicates tree removal during ground and vegetation disturbing activities. CDFW is concerned that the trees to be removed have not been identified, nor have the number of trees been indicated. In addition, an investigation has not taken place to identify the potential for tree pests.

**Specific Impact:** Project activities that involve removal of trees have the potential to result in the spread of tree insect pests and disease into areas not currently exposed to these stressors. This could result in expediting the loss of trees in California which may support a high biological diversity including special status species.

**Why impact would occur:** Trees will be removed and presumably hauled to off-site locations for disposal, thereby exposing off-site tree species to potential infestation and disease.

**Evidence Impact would be significant:** The Project may result in an adverse effect, either directly or through habitat modifications, by exposing other habitats to insect and/or disease pathogens. Exposure to insect and/or disease pathogens may have a substantial adverse effect on any sensitive natural identified in local or regional plans, policies, and regulations or by the CDFW or U.S. Fish and Wildlife Service.

**Recommended Potentially Feasible Mitigation Measure(s):**

**Mitigation Measure #1:** CDFW recommends replacing all trees removed as a result of the proposed work activities at least a 1:1 ratio with native trees.

**Mitigation Measure #2:** To reduce impacts to less than significant the final environmental document should describe an infectious tree disease management plan and how it will be implemented to avoid significant impacts under CEQA. All trees identified for removal resulting from the Project should be inspected for contagious tree diseases including but not limited to: thousand canker fungus (*Geosmithia morbida*), Polyphagous Shot Hole Borer (*Euwallacea* spp.), and goldspotted oak borer (*Agilus auroguttatus*) (TCD 2020; UCANR 2020; UCIPM 2013). To avoid the spread of infectious tree diseases, diseased trees should not be transported from the Project site without first being treated using best available management practices relevant for each tree disease observed.

**Response to Comment 2-H:**

None of the trees that would be removed are protected by applicable ordinances, and the removal of such trees would not constitute a significant impact, and no replacement measures would be warranted to offset their removals. As discussed in the IS/MND, Section 5.4 e), "No ordinance-sized oak trees were located within the survey area." While this statement refers to the trees surrounding the water tank to be replaced, the IS/MND further states that oak trees in the vicinity of the staging area would be protected from encroachments, and a mitigation measure was included in the IS/MND to address fencing those trees to avoid impacts. As shown in the IS/MND Appendix B.1 Plate 1 (Photo 1A), and Appendix B.2 Plate 1 (Photo 1B), trees adjacent to the water tank site that may be removed primarily consist of eucalyptus, planted onsite with construction of the existing water tank(s), which are exotic non-native species.

Regarding the portion of the comment related to the potential for removed trees to be infected with pests or disease that could affect other habitats where disposed, the project proposes to dispose of removed trees in a landfill, where they would be covered with soil and/or other refuse, which would not be conducive to spread of such pathogens, if present, to other habitats. As such, the potential for the project to affect other habitat by spread of potentially occurring pathogens would be less than significant, and no further measures would be warranted to address this comment.

Therefore, the project would not result in a potentially significant impact regarding the concerns raised by this comment.

**Comment 2-I:****Filing Fees**

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

**Response to Comment 2-I:**

This comment is noted. No new environmental issues are raised in this comment.

**Comment 2-J:****Conclusion**

We appreciate the opportunity to comment on the Project to assist the LVMWD in adequately analyzing and minimizing/mitigating impacts to biological resources. CDFW requests an opportunity to review and comment on any response that the LVMWD has to our comments and to receive notification of any forthcoming hearing date(s) for the Project. Questions regarding this letter and further coordination on these issues should be directed to Felicia Silva, Environmental Scientist, at Felicia.Silva@wildlife.ca.gov or (562) 430-0098.

**Response to Comment 2-J:**

Pursuant to California Code of Regulations (CEQA Guidelines) Sections 15073, 15072(g)(3), and 15072(g)(4), the District as lead agency will notify CDFW of any public hearing to be held for the

project as well as the address (website) where the MND with responses to comments will be available for review. No new environmental issues are raised in this comment.

## **APPENDIX A**

### **Air Quality and Greenhouse Gas Emissions Modeling Outputs**

Twin Lakes Water Tank - South Coast Air Basin, Winter

**Twin Lakes Water Tank**  
**South Coast Air Basin, Winter**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	4.80	1000sqft	0.21	4,800.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	12			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	702.44	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Twin Lakes Water Tank - South Coast Air Basin, Winter

Project Characteristics -

Land Use - 0.21 acre grading area. 4,800 sf tank footprint.

Construction Phase - 5 days demo. 4 days grading. 20 days coating

Off-road Equipment -

Off-road Equipment - welder, loader

Off-road Equipment - excavator, loader, water truck

Off-road Equipment - loader, skid steer, excavator, loader, water truck

Off-road Equipment - 1 mixer

Off-road Equipment - dozer

Trips and VMT - 14 cy haul trucks. 50 mile export distance

Demolition - 200 tons demo

Grading - .21 acres grading. 3,000 cy export

Architectural Coating -

Vehicle Trips - No daily trips

Woodstoves -

Construction Off-road Equipment Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps - standby diesel generator 600-750 hp. 0.5 hr/week

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	4.00
tblConstructionPhase	PhaseEndDate	5/26/2021	6/11/2021
tblConstructionPhase	PhaseEndDate	5/12/2021	5/7/2021
tblConstructionPhase	PhaseEndDate	12/18/2020	12/11/2020
tblConstructionPhase	PhaseEndDate	12/23/2020	12/18/2020
tblConstructionPhase	PhaseEndDate	5/19/2021	5/14/2021

Twin Lakes Water Tank - South Coast Air Basin, Winter

tblConstructionPhase	PhaseEndDate	12/21/2020	12/14/2020
tblConstructionPhase	PhaseStartDate	5/20/2021	5/17/2021
tblConstructionPhase	PhaseStartDate	12/24/2020	12/21/2020
tblConstructionPhase	PhaseStartDate	12/22/2020	12/15/2020
tblConstructionPhase	PhaseStartDate	5/13/2021	5/10/2021
tblConstructionPhase	PhaseStartDate	12/19/2020	12/14/2020
tblGrading	AcresOfGrading	0.00	0.21
tblGrading	AcresOfGrading	0.50	0.00
tblGrading	MaterialExported	0.00	3,000.00
tblLandUse	LotAcreage	0.11	0.21
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	700.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	26.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	375.00	428.00
tblTripsAndVMT	WorkerTripNumber	18.00	8.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00
tblTripsAndVMT	WorkerTripNumber	20.00	13.00
tblVehicleTrips	ST_TR	1.32	0.00

## Twin Lakes Water Tank - South Coast Air Basin, Winter

tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

## 2.0 Emissions Summary

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Twin Lakes Water Tank - South Coast Air Basin, Winter

**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	0.1073	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0500e-003	1.0500e-003	0.0000		1.1200e-003
Energy	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		28.0032	28.0032	5.4000e-004	5.1000e-004	28.1696
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
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.1099</b>	<b>0.0233</b>	<b>0.0201</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.7700e-003</b>	<b>1.7700e-003</b>	<b>0.0000</b>	<b>1.7700e-003</b>	<b>1.7700e-003</b>		<b>28.0043</b>	<b>28.0043</b>	<b>5.4000e-004</b>	<b>5.1000e-004</b>	<b>28.1708</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**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	lb/day										lb/day					
Area	0.1073	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0500e-003	1.0500e-003	0.0000		1.1200e-003
Energy	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		28.0032	28.0032	5.4000e-004	5.1000e-004	28.1696
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
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.1099</b>	<b>0.0233</b>	<b>0.0201</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.7700e-003</b>	<b>1.7700e-003</b>	<b>0.0000</b>	<b>1.7700e-003</b>	<b>1.7700e-003</b>		<b>28.0043</b>	<b>28.0043</b>	<b>5.4000e-004</b>	<b>5.1000e-004</b>	<b>28.1708</b>

	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
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**3.0 Construction Detail**

**Construction Phase**

Twin Lakes Water Tank - South Coast Air Basin, Winter

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/7/2020	12/11/2020	5	5	
2	Site Preparation	Site Preparation	12/14/2020	12/14/2020	5	1	
3	Grading	Grading	12/15/2020	12/18/2020	5	4	
4	Building Construction	Building Construction	12/21/2020	5/7/2021	5	100	
5	Paving	Paving	5/10/2021	5/14/2021	5	5	
6	Architectural Coating	Architectural Coating	5/17/2021	6/11/2021	5	20	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0.21**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 7,200; Non-Residential Outdoor: 2,400; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

## Twin Lakes Water Tank - South Coast Air Basin, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Loaders	1	8.00	203	0.36
Demolition	Off-Highway Trucks	1	8.00	402	0.38
Grading	Excavators	1	8.00	158	0.38
Grading	Off-Highway Trucks	1	8.00	402	0.38
Grading	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Rubber Tired Loaders	1	8.00	203	0.36

Twin Lakes Water Tank - South Coast Air Basin, Winter

**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
Demolition	7	8.00	0.00	20.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	13.00	0.00	428.00	14.70	6.90	50.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	2.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	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 Demolition - 2020**

**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					0.8560	0.0000	0.8560	0.1296	0.0000	0.1296			0.0000			0.0000
Off-Road	2.1496	21.0178	16.3359	0.0366		0.9608	0.9608		0.8998	0.8998		3,531.1356	3,531.1356	0.9879		3,555.8332
<b>Total</b>	<b>2.1496</b>	<b>21.0178</b>	<b>16.3359</b>	<b>0.0366</b>	<b>0.8560</b>	<b>0.9608</b>	<b>1.8168</b>	<b>0.1296</b>	<b>0.8998</b>	<b>1.0294</b>		<b>3,531.1356</b>	<b>3,531.1356</b>	<b>0.9879</b>		<b>3,555.8332</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.2 Demolition - 2020**

**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	0.0327	1.1291	0.2475	3.0500e-003	0.0699	3.6600e-003	0.0735	0.0191	3.5000e-003	0.0227		331.2051	331.2051	0.0248		331.8239
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	0.0395	0.0267	0.2957	8.6000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.3000e-004	0.0243		85.8281	85.8281	2.4700e-003		85.8899
<b>Total</b>	<b>0.0721</b>	<b>1.1557</b>	<b>0.5432</b>	<b>3.9100e-003</b>	<b>0.1593</b>	<b>4.3400e-003</b>	<b>0.1636</b>	<b>0.0429</b>	<b>4.1300e-003</b>	<b>0.0470</b>		<b>417.0332</b>	<b>417.0332</b>	<b>0.0272</b>		<b>417.7137</b>

**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					0.3852	0.0000	0.3852	0.0583	0.0000	0.0583			0.0000			0.0000
Off-Road	2.1496	21.0178	16.3359	0.0366		0.9608	0.9608		0.8998	0.8998	0.0000	3,531.1356	3,531.1356	0.9879		3,555.8332
<b>Total</b>	<b>2.1496</b>	<b>21.0178</b>	<b>16.3359</b>	<b>0.0366</b>	<b>0.3852</b>	<b>0.9608</b>	<b>1.3460</b>	<b>0.0583</b>	<b>0.8998</b>	<b>0.9581</b>	<b>0.0000</b>	<b>3,531.1356</b>	<b>3,531.1356</b>	<b>0.9879</b>		<b>3,555.8332</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.2 Demolition - 2020**

**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	0.0327	1.1291	0.2475	3.0500e-003	0.0699	3.6600e-003	0.0735	0.0191	3.5000e-003	0.0227		331.2051	331.2051	0.0248		331.8239
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	0.0395	0.0267	0.2957	8.6000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.3000e-004	0.0243		85.8281	85.8281	2.4700e-003		85.8899
<b>Total</b>	<b>0.0721</b>	<b>1.1557</b>	<b>0.5432</b>	<b>3.9100e-003</b>	<b>0.1593</b>	<b>4.3400e-003</b>	<b>0.1636</b>	<b>0.0429</b>	<b>4.1300e-003</b>	<b>0.0470</b>		<b>417.0332</b>	<b>417.0332</b>	<b>0.0272</b>		<b>417.7137</b>

**3.3 Site Preparation - 2020**

**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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	1.7648	19.7629	8.2258	0.0183		0.8903	0.8903		0.8191	0.8191		1,770.8297	1,770.8297	0.5727		1,785.1477
<b>Total</b>	<b>1.7648</b>	<b>19.7629</b>	<b>8.2258</b>	<b>0.0183</b>	<b>6.0221</b>	<b>0.8903</b>	<b>6.9124</b>	<b>3.3102</b>	<b>0.8191</b>	<b>4.1293</b>		<b>1,770.8297</b>	<b>1,770.8297</b>	<b>0.5727</b>		<b>1,785.1477</b>



Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.3 Site Preparation - 2020**

**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	0.0247	0.0167	0.1848	5.4000e-004	0.0559	4.3000e-004	0.0563	0.0148	3.9000e-004	0.0152		53.6426	53.6426	1.5400e-003		53.6812
<b>Total</b>	<b>0.0247</b>	<b>0.0167</b>	<b>0.1848</b>	<b>5.4000e-004</b>	<b>0.0559</b>	<b>4.3000e-004</b>	<b>0.0563</b>	<b>0.0148</b>	<b>3.9000e-004</b>	<b>0.0152</b>		<b>53.6426</b>	<b>53.6426</b>	<b>1.5400e-003</b>		<b>53.6812</b>

**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					2.7099	0.0000	2.7099	1.4896	0.0000	1.4896			0.0000			0.0000
Off-Road	1.7648	19.7629	8.2258	0.0183		0.8903	0.8903		0.8191	0.8191	0.0000	1,770.8297	1,770.8297	0.5727		1,785.1477
<b>Total</b>	<b>1.7648</b>	<b>19.7629</b>	<b>8.2258</b>	<b>0.0183</b>	<b>2.7099</b>	<b>0.8903</b>	<b>3.6003</b>	<b>1.4896</b>	<b>0.8191</b>	<b>2.3087</b>	<b>0.0000</b>	<b>1,770.8297</b>	<b>1,770.8297</b>	<b>0.5727</b>		<b>1,785.1477</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.3 Site Preparation - 2020**

**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	0.0247	0.0167	0.1848	5.4000e-004	0.0559	4.3000e-004	0.0563	0.0148	3.9000e-004	0.0152		53.6426	53.6426	1.5400e-003		53.6812
<b>Total</b>	<b>0.0247</b>	<b>0.0167</b>	<b>0.1848</b>	<b>5.4000e-004</b>	<b>0.0559</b>	<b>4.3000e-004</b>	<b>0.0563</b>	<b>0.0148</b>	<b>3.9000e-004</b>	<b>0.0152</b>		<b>53.6426</b>	<b>53.6426</b>	<b>1.5400e-003</b>		<b>53.6812</b>

**3.4 Grading - 2020**

**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					0.8933	0.0000	0.8933	0.4326	0.0000	0.4326			0.0000			0.0000
Off-Road	2.2295	22.0802	17.7259	0.0387		1.0068	1.0068		0.9421	0.9421		3,731.3043	3,731.3043	1.0526		3,757.6204
<b>Total</b>	<b>2.2295</b>	<b>22.0802</b>	<b>17.7259</b>	<b>0.0387</b>	<b>0.8933</b>	<b>1.0068</b>	<b>1.9000</b>	<b>0.4326</b>	<b>0.9421</b>	<b>1.3747</b>		<b>3,731.3043</b>	<b>3,731.3043</b>	<b>1.0526</b>		<b>3,757.6204</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.4 Grading - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8878	60.7779	14.0639	0.1896	4.6688	0.2361	4.9049	1.2790	0.2259	1.5049		20,573.5411	20,573.5411	1.3343		20,606.8974
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	0.0642	0.0433	0.4805	1.4000e-003	0.1453	1.1100e-003	0.1464	0.0385	1.0200e-003	0.0396		139.4707	139.4707	4.0100e-003		139.5710
<b>Total</b>	<b>1.9520</b>	<b>60.8212</b>	<b>14.5443</b>	<b>0.1910</b>	<b>4.8141</b>	<b>0.2372</b>	<b>5.0513</b>	<b>1.3176</b>	<b>0.2269</b>	<b>1.5444</b>		<b>20,713.0118</b>	<b>20,713.0118</b>	<b>1.3383</b>		<b>20,746.4684</b>

**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					0.4020	0.0000	0.4020	0.1947	0.0000	0.1947			0.0000			0.0000
Off-Road	2.2295	22.0802	17.7259	0.0387		1.0068	1.0068		0.9421	0.9421	0.0000	3,731.3043	3,731.3043	1.0526		3,757.6204
<b>Total</b>	<b>2.2295</b>	<b>22.0802</b>	<b>17.7259</b>	<b>0.0387</b>	<b>0.4020</b>	<b>1.0068</b>	<b>1.4088</b>	<b>0.1947</b>	<b>0.9421</b>	<b>1.1368</b>	<b>0.0000</b>	<b>3,731.3043</b>	<b>3,731.3043</b>	<b>1.0526</b>		<b>3,757.6204</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.4 Grading - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8878	60.7779	14.0639	0.1896	4.6688	0.2361	4.9049	1.2790	0.2259	1.5049		20,573.5411	20,573.5411	1.3343		20,606.8974
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	0.0642	0.0433	0.4805	1.4000e-003	0.1453	1.1100e-003	0.1464	0.0385	1.0200e-003	0.0396		139.4707	139.4707	4.0100e-003		139.5710
<b>Total</b>	<b>1.9520</b>	<b>60.8212</b>	<b>14.5443</b>	<b>0.1910</b>	<b>4.8141</b>	<b>0.2372</b>	<b>5.0513</b>	<b>1.3176</b>	<b>0.2269</b>	<b>1.5444</b>		<b>20,713.0118</b>	<b>20,713.0118</b>	<b>1.3383</b>		<b>20,746.4684</b>

**3.5 Building Construction - 2020**

**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	1.5779	14.8332	10.7899	0.0202		0.7556	0.7556		0.7021	0.7021		1,915.6157	1,915.6157	0.5831		1,930.1936
<b>Total</b>	<b>1.5779</b>	<b>14.8332</b>	<b>10.7899</b>	<b>0.0202</b>		<b>0.7556</b>	<b>0.7556</b>		<b>0.7021</b>	<b>0.7021</b>		<b>1,915.6157</b>	<b>1,915.6157</b>	<b>0.5831</b>		<b>1,930.1936</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.5 Building Construction - 2020**

**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	3.4700e-003	0.1053	0.0284	2.5000e-004	6.4000e-003	5.3000e-004	6.9300e-003	1.8400e-003	5.1000e-004	2.3500e-003		26.5377	26.5377	1.8700e-003		26.5844
Worker	9.8700e-003	6.6600e-003	0.0739	2.2000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		21.4570	21.4570	6.2000e-004		21.4725
<b>Total</b>	<b>0.0133</b>	<b>0.1119</b>	<b>0.1023</b>	<b>4.7000e-004</b>	<b>0.0288</b>	<b>7.0000e-004</b>	<b>0.0295</b>	<b>7.7700e-003</b>	<b>6.7000e-004</b>	<b>8.4400e-003</b>		<b>47.9948</b>	<b>47.9948</b>	<b>2.4900e-003</b>		<b>48.0569</b>

**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	1.5779	14.8332	10.7899	0.0202		0.7556	0.7556		0.7021	0.7021	0.0000	1,915.6157	1,915.6157	0.5831		1,930.1936
<b>Total</b>	<b>1.5779</b>	<b>14.8332</b>	<b>10.7899</b>	<b>0.0202</b>		<b>0.7556</b>	<b>0.7556</b>		<b>0.7021</b>	<b>0.7021</b>	<b>0.0000</b>	<b>1,915.6157</b>	<b>1,915.6157</b>	<b>0.5831</b>		<b>1,930.1936</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.5 Building Construction - 2020**

**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	3.4700e-003	0.1053	0.0284	2.5000e-004	6.4000e-003	5.3000e-004	6.9300e-003	1.8400e-003	5.1000e-004	2.3500e-003		26.5377	26.5377	1.8700e-003		26.5844
Worker	9.8700e-003	6.6600e-003	0.0739	2.2000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		21.4570	21.4570	6.2000e-004		21.4725
<b>Total</b>	<b>0.0133</b>	<b>0.1119</b>	<b>0.1023</b>	<b>4.7000e-004</b>	<b>0.0288</b>	<b>7.0000e-004</b>	<b>0.0295</b>	<b>7.7700e-003</b>	<b>6.7000e-004</b>	<b>8.4400e-003</b>		<b>47.9948</b>	<b>47.9948</b>	<b>2.4900e-003</b>		<b>48.0569</b>

**3.5 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	1.4207	13.3576	10.5812	0.0202		0.6505	0.6505		0.6044	0.6044		1,915.9197	1,915.9197	0.5796		1,930.4088
<b>Total</b>	<b>1.4207</b>	<b>13.3576</b>	<b>10.5812</b>	<b>0.0202</b>		<b>0.6505</b>	<b>0.6505</b>		<b>0.6044</b>	<b>0.6044</b>		<b>1,915.9197</b>	<b>1,915.9197</b>	<b>0.5796</b>		<b>1,930.4088</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.5 Building Construction - 2021**

**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	2.9600e-003	0.0955	0.0259	2.5000e-004	6.4000e-003	2.0000e-004	6.6000e-003	1.8400e-003	1.9000e-004	2.0300e-003		26.3374	26.3374	1.7900e-003		26.3821
Worker	9.2200e-003	6.0000e-003	0.0680	2.1000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.5000e-004	6.0800e-003		20.7630	20.7630	5.6000e-004		20.7770
<b>Total</b>	<b>0.0122</b>	<b>0.1015</b>	<b>0.0938</b>	<b>4.6000e-004</b>	<b>0.0288</b>	<b>3.7000e-004</b>	<b>0.0291</b>	<b>7.7700e-003</b>	<b>3.4000e-004</b>	<b>8.1100e-003</b>		<b>47.1004</b>	<b>47.1004</b>	<b>2.3500e-003</b>		<b>47.1591</b>

**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	1.4207	13.3576	10.5812	0.0202		0.6505	0.6505		0.6044	0.6044	0.0000	1,915.9197	1,915.9197	0.5796		1,930.4088
<b>Total</b>	<b>1.4207</b>	<b>13.3576</b>	<b>10.5812</b>	<b>0.0202</b>		<b>0.6505</b>	<b>0.6505</b>		<b>0.6044</b>	<b>0.6044</b>	<b>0.0000</b>	<b>1,915.9197</b>	<b>1,915.9197</b>	<b>0.5796</b>		<b>1,930.4088</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.5 Building Construction - 2021**

**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	2.9600e-003	0.0955	0.0259	2.5000e-004	6.4000e-003	2.0000e-004	6.6000e-003	1.8400e-003	1.9000e-004	2.0300e-003		26.3374	26.3374	1.7900e-003		26.3821
Worker	9.2200e-003	6.0000e-003	0.0680	2.1000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.5000e-004	6.0800e-003		20.7630	20.7630	5.6000e-004		20.7770
<b>Total</b>	<b>0.0122</b>	<b>0.1015</b>	<b>0.0938</b>	<b>4.6000e-004</b>	<b>0.0288</b>	<b>3.7000e-004</b>	<b>0.0291</b>	<b>7.7700e-003</b>	<b>3.4000e-004</b>	<b>8.1100e-003</b>		<b>47.1004</b>	<b>47.1004</b>	<b>2.3500e-003</b>		<b>47.1591</b>

**3.6 Paving - 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	0.5892	5.8893	6.3961	9.6600e-003		0.3212	0.3212		0.2964	0.2964		921.6808	921.6808	0.2898		928.9251
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.5892</b>	<b>5.8893</b>	<b>6.3961</b>	<b>9.6600e-003</b>		<b>0.3212</b>	<b>0.3212</b>		<b>0.2964</b>	<b>0.2964</b>		<b>921.6808</b>	<b>921.6808</b>	<b>0.2898</b>		<b>928.9251</b>



Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.6 Paving - 2021**

**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	0.0461	0.0300	0.3399	1.0400e-003	0.1118	8.3000e-004	0.1126	0.0296	7.6000e-004	0.0304		103.8151	103.8151	2.7900e-003		103.8849
<b>Total</b>	<b>0.0461</b>	<b>0.0300</b>	<b>0.3399</b>	<b>1.0400e-003</b>	<b>0.1118</b>	<b>8.3000e-004</b>	<b>0.1126</b>	<b>0.0296</b>	<b>7.6000e-004</b>	<b>0.0304</b>		<b>103.8151</b>	<b>103.8151</b>	<b>2.7900e-003</b>		<b>103.8849</b>

**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	0.5892	5.8893	6.3961	9.6600e-003		0.3212	0.3212		0.2964	0.2964	0.0000	921.6808	921.6808	0.2898		928.9251
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.5892</b>	<b>5.8893</b>	<b>6.3961</b>	<b>9.6600e-003</b>		<b>0.3212</b>	<b>0.3212</b>		<b>0.2964</b>	<b>0.2964</b>	<b>0.0000</b>	<b>921.6808</b>	<b>921.6808</b>	<b>0.2898</b>		<b>928.9251</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.6 Paving - 2021**

**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	0.0461	0.0300	0.3399	1.0400e-003	0.1118	8.3000e-004	0.1126	0.0296	7.6000e-004	0.0304		103.8151	103.8151	2.7900e-003		103.8849
<b>Total</b>	<b>0.0461</b>	<b>0.0300</b>	<b>0.3399</b>	<b>1.0400e-003</b>	<b>0.1118</b>	<b>8.3000e-004</b>	<b>0.1126</b>	<b>0.0296</b>	<b>7.6000e-004</b>	<b>0.0304</b>		<b>103.8151</b>	<b>103.8151</b>	<b>2.7900e-003</b>		<b>103.8849</b>

**3.7 Architectural Coating - 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					
Archit. Coating	2.2248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
<b>Total</b>	<b>2.4437</b>	<b>1.5268</b>	<b>1.8176</b>	<b>2.9700e-003</b>		<b>0.0941</b>	<b>0.0941</b>		<b>0.0941</b>	<b>0.0941</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0193</b>		<b>281.9309</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.7 Architectural Coating - 2021**

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**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	2.2248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
<b>Total</b>	<b>2.4437</b>	<b>1.5268</b>	<b>1.8176</b>	<b>2.9700e-003</b>		<b>0.0941</b>	<b>0.0941</b>		<b>0.0941</b>	<b>0.0941</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0193</b>		<b>281.9309</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**3.7 Architectural Coating - 2021**

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

Twin Lakes Water Tank - South Coast Air Basin, Winter

	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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924

5.0 Energy Detail

Historical Energy Use: N

Twin Lakes Water Tank - South Coast Air Basin, Winter

**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	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		28.0032	28.0032	5.4000e-004	5.1000e-004	28.1696
NaturalGas Unmitigated	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		28.0032	28.0032	5.4000e-004	5.1000e-004	28.1696

**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					
General Light Industry	238.027	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		28.0032	28.0032	5.4000e-004	5.1000e-004	28.1696
<b>Total</b>		<b>2.5700e-003</b>	<b>0.0233</b>	<b>0.0196</b>	<b>1.4000e-004</b>		<b>1.7700e-003</b>	<b>1.7700e-003</b>		<b>1.7700e-003</b>	<b>1.7700e-003</b>		<b>28.0032</b>	<b>28.0032</b>	<b>5.4000e-004</b>	<b>5.1000e-004</b>	<b>28.1696</b>

Twin Lakes Water Tank - South Coast Air Basin, Winter

**5.2 Energy by Land Use - NaturalGas**

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.238027	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		28.0032	28.0032	5.4000e-004	5.1000e-004	28.1696
<b>Total</b>		<b>2.5700e-003</b>	<b>0.0233</b>	<b>0.0196</b>	<b>1.4000e-004</b>		<b>1.7700e-003</b>	<b>1.7700e-003</b>		<b>1.7700e-003</b>	<b>1.7700e-003</b>		<b>28.0032</b>	<b>28.0032</b>	<b>5.4000e-004</b>	<b>5.1000e-004</b>	<b>28.1696</b>

**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	0.1073	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0500e-003	1.0500e-003	0.0000		1.1200e-003
Unmitigated	0.1073	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0500e-003	1.0500e-003	0.0000		1.1200e-003

Twin Lakes Water Tank - South Coast Air Basin, Winter

**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	0.0122					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0950					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0500e-003	1.0500e-003	0.0000		1.1200e-003
<b>Total</b>	<b>0.1073</b>	<b>0.0000</b>	<b>4.9000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>1.0500e-003</b>	<b>1.0500e-003</b>	<b>0.0000</b>		<b>1.1200e-003</b>

**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	0.0122					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0950					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0500e-003	1.0500e-003	0.0000		1.1200e-003
<b>Total</b>	<b>0.1073</b>	<b>0.0000</b>	<b>4.9000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>1.0500e-003</b>	<b>1.0500e-003</b>	<b>0.0000</b>		<b>1.1200e-003</b>

**7.0 Water Detail**



Twin Lakes Water Tank - South Coast Air Basin, Winter

**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
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**10.0 Stationary Equipment**

**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	26	700	0.73	Diesel

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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Twin Lakes Water Tank - South Coast Air Basin, Winter

**10.1 Stationary Sources**

**Unmitigated/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	
Equipment Type	lb/day										lb/day						
Emergency Generator - Diesel (600 - 750 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>			<b>0.0000</b>

**11.0 Vegetation**

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Twin Lakes Water Tank - South Coast Air Basin, Summer

**Twin Lakes Water Tank**  
**South Coast Air Basin, Summer**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	4.80	1000sqft	0.21	4,800.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	12			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	702.44	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Twin Lakes Water Tank - South Coast Air Basin, Summer

Project Characteristics -

Land Use - 0.21 acre grading area. 4,800 sf tank footprint.

Construction Phase - 5 days demo. 4 days grading. 20 days coating

Off-road Equipment -

Off-road Equipment - welder, loader

Off-road Equipment - excavator, loader, water truck

Off-road Equipment - loader, skid steer, excavator, loader, water truck

Off-road Equipment - 1 mixer

Off-road Equipment - dozer

Trips and VMT - 14 cy haul trucks. 50 mile export distance

Demolition - 200 tons demo

Grading - .21 acres grading. 3,000 cy export

Architectural Coating -

Vehicle Trips - No daily trips

Woodstoves -

Construction Off-road Equipment Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps - standby diesel generator 600-750 hp. 0.5 hr/week

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	4.00
tblConstructionPhase	PhaseEndDate	5/26/2021	6/11/2021
tblConstructionPhase	PhaseEndDate	5/12/2021	5/7/2021
tblConstructionPhase	PhaseEndDate	12/18/2020	12/11/2020
tblConstructionPhase	PhaseEndDate	12/23/2020	12/18/2020
tblConstructionPhase	PhaseEndDate	5/19/2021	5/14/2021

Twin Lakes Water Tank - South Coast Air Basin, Summer

tblConstructionPhase	PhaseEndDate	12/21/2020	12/14/2020
tblConstructionPhase	PhaseStartDate	5/20/2021	5/17/2021
tblConstructionPhase	PhaseStartDate	12/24/2020	12/21/2020
tblConstructionPhase	PhaseStartDate	12/22/2020	12/15/2020
tblConstructionPhase	PhaseStartDate	5/13/2021	5/10/2021
tblConstructionPhase	PhaseStartDate	12/19/2020	12/14/2020
tblGrading	AcresOfGrading	0.00	0.21
tblGrading	AcresOfGrading	0.50	0.00
tblGrading	MaterialExported	0.00	3,000.00
tblLandUse	LotAcreage	0.11	0.21
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	700.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	26.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	375.00	428.00
tblTripsAndVMT	WorkerTripNumber	18.00	8.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00
tblTripsAndVMT	WorkerTripNumber	20.00	13.00
tblVehicleTrips	ST_TR	1.32	0.00

Twin Lakes Water Tank - South Coast Air Basin, Summer

tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

**2.0 Emissions Summary**

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Twin Lakes Water Tank - South Coast Air Basin, Summer

**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	0.1073	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0500e-003	1.0500e-003	0.0000		1.1200e-003
Energy	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		28.0032	28.0032	5.4000e-004	5.1000e-004	28.1696
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
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.1099</b>	<b>0.0233</b>	<b>0.0201</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.7700e-003</b>	<b>1.7700e-003</b>	<b>0.0000</b>	<b>1.7700e-003</b>	<b>1.7700e-003</b>		<b>28.0043</b>	<b>28.0043</b>	<b>5.4000e-004</b>	<b>5.1000e-004</b>	<b>28.1708</b>



Twin Lakes Water Tank - South Coast Air Basin, Summer

**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	lb/day										lb/day					
Area	0.1073	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0500e-003	1.0500e-003	0.0000		1.1200e-003
Energy	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		28.0032	28.0032	5.4000e-004	5.1000e-004	28.1696
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
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.1099</b>	<b>0.0233</b>	<b>0.0201</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.7700e-003</b>	<b>1.7700e-003</b>	<b>0.0000</b>	<b>1.7700e-003</b>	<b>1.7700e-003</b>		<b>28.0043</b>	<b>28.0043</b>	<b>5.4000e-004</b>	<b>5.1000e-004</b>	<b>28.1708</b>

	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
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**3.0 Construction Detail**

**Construction Phase**

## Twin Lakes Water Tank - South Coast Air Basin, Summer

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/7/2020	12/11/2020	5	5	
2	Site Preparation	Site Preparation	12/14/2020	12/14/2020	5	1	
3	Grading	Grading	12/15/2020	12/18/2020	5	4	
4	Building Construction	Building Construction	12/21/2020	5/7/2021	5	100	
5	Paving	Paving	5/10/2021	5/14/2021	5	5	
6	Architectural Coating	Architectural Coating	5/17/2021	6/11/2021	5	20	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0.21**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 7,200; Non-Residential Outdoor: 2,400; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

## Twin Lakes Water Tank - South Coast Air Basin, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Loaders	1	8.00	203	0.36
Demolition	Off-Highway Trucks	1	8.00	402	0.38
Grading	Excavators	1	8.00	158	0.38
Grading	Off-Highway Trucks	1	8.00	402	0.38
Grading	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Rubber Tired Loaders	1	8.00	203	0.36

Twin Lakes Water Tank - South Coast Air Basin, Summer

**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
Demolition	7	8.00	0.00	20.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	13.00	0.00	428.00	14.70	6.90	50.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	2.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	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 Demolition - 2020**

**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					0.8560	0.0000	0.8560	0.1296	0.0000	0.1296			0.0000			0.0000
Off-Road	2.1496	21.0178	16.3359	0.0366		0.9608	0.9608		0.8998	0.8998		3,531.1356	3,531.1356	0.9879		3,555.8332
<b>Total</b>	<b>2.1496</b>	<b>21.0178</b>	<b>16.3359</b>	<b>0.0366</b>	<b>0.8560</b>	<b>0.9608</b>	<b>1.8168</b>	<b>0.1296</b>	<b>0.8998</b>	<b>1.0294</b>		<b>3,531.1356</b>	<b>3,531.1356</b>	<b>0.9879</b>		<b>3,555.8332</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.2 Demolition - 2020**

**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	0.0318	1.1144	0.2317	3.1100e-003	0.0699	3.6100e-003	0.0735	0.0191	3.4500e-003	0.0226		336.9600	336.9600	0.0238		337.5558
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	0.0359	0.0243	0.3261	9.2000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.3000e-004	0.0243		91.5069	91.5069	2.6400e-003		91.5728
<b>Total</b>	<b>0.0677</b>	<b>1.1387</b>	<b>0.5578</b>	<b>4.0300e-003</b>	<b>0.1593</b>	<b>4.2900e-003</b>	<b>0.1636</b>	<b>0.0429</b>	<b>4.0800e-003</b>	<b>0.0469</b>		<b>428.4669</b>	<b>428.4669</b>	<b>0.0265</b>		<b>429.1287</b>

**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					0.3852	0.0000	0.3852	0.0583	0.0000	0.0583			0.0000			0.0000
Off-Road	2.1496	21.0178	16.3359	0.0366		0.9608	0.9608		0.8998	0.8998	0.0000	3,531.1356	3,531.1356	0.9879		3,555.8332
<b>Total</b>	<b>2.1496</b>	<b>21.0178</b>	<b>16.3359</b>	<b>0.0366</b>	<b>0.3852</b>	<b>0.9608</b>	<b>1.3460</b>	<b>0.0583</b>	<b>0.8998</b>	<b>0.9581</b>	<b>0.0000</b>	<b>3,531.1356</b>	<b>3,531.1356</b>	<b>0.9879</b>		<b>3,555.8332</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.2 Demolition - 2020**

**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	0.0318	1.1144	0.2317	3.1100e-003	0.0699	3.6100e-003	0.0735	0.0191	3.4500e-003	0.0226		336.9600	336.9600	0.0238		337.5558
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	0.0359	0.0243	0.3261	9.2000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.3000e-004	0.0243		91.5069	91.5069	2.6400e-003		91.5728
<b>Total</b>	<b>0.0677</b>	<b>1.1387</b>	<b>0.5578</b>	<b>4.0300e-003</b>	<b>0.1593</b>	<b>4.2900e-003</b>	<b>0.1636</b>	<b>0.0429</b>	<b>4.0800e-003</b>	<b>0.0469</b>		<b>428.4669</b>	<b>428.4669</b>	<b>0.0265</b>		<b>429.1287</b>

**3.3 Site Preparation - 2020**

**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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	1.7648	19.7629	8.2258	0.0183		0.8903	0.8903		0.8191	0.8191		1,770.8297	1,770.8297	0.5727		1,785.1477
<b>Total</b>	<b>1.7648</b>	<b>19.7629</b>	<b>8.2258</b>	<b>0.0183</b>	<b>6.0221</b>	<b>0.8903</b>	<b>6.9124</b>	<b>3.3102</b>	<b>0.8191</b>	<b>4.1293</b>		<b>1,770.8297</b>	<b>1,770.8297</b>	<b>0.5727</b>		<b>1,785.1477</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.3 Site Preparation - 2020**

**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	0.0224	0.0152	0.2038	5.7000e-004	0.0559	4.3000e-004	0.0563	0.0148	3.9000e-004	0.0152		57.1918	57.1918	1.6500e-003		57.2330
<b>Total</b>	<b>0.0224</b>	<b>0.0152</b>	<b>0.2038</b>	<b>5.7000e-004</b>	<b>0.0559</b>	<b>4.3000e-004</b>	<b>0.0563</b>	<b>0.0148</b>	<b>3.9000e-004</b>	<b>0.0152</b>		<b>57.1918</b>	<b>57.1918</b>	<b>1.6500e-003</b>		<b>57.2330</b>

**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					2.7099	0.0000	2.7099	1.4896	0.0000	1.4896			0.0000			0.0000
Off-Road	1.7648	19.7629	8.2258	0.0183		0.8903	0.8903		0.8191	0.8191	0.0000	1,770.8297	1,770.8297	0.5727		1,785.1477
<b>Total</b>	<b>1.7648</b>	<b>19.7629</b>	<b>8.2258</b>	<b>0.0183</b>	<b>2.7099</b>	<b>0.8903</b>	<b>3.6003</b>	<b>1.4896</b>	<b>0.8191</b>	<b>2.3087</b>	<b>0.0000</b>	<b>1,770.8297</b>	<b>1,770.8297</b>	<b>0.5727</b>		<b>1,785.1477</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.3 Site Preparation - 2020**

**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	0.0224	0.0152	0.2038	5.7000e-004	0.0559	4.3000e-004	0.0563	0.0148	3.9000e-004	0.0152		57.1918	57.1918	1.6500e-003		57.2330
<b>Total</b>	<b>0.0224</b>	<b>0.0152</b>	<b>0.2038</b>	<b>5.7000e-004</b>	<b>0.0559</b>	<b>4.3000e-004</b>	<b>0.0563</b>	<b>0.0148</b>	<b>3.9000e-004</b>	<b>0.0152</b>		<b>57.1918</b>	<b>57.1918</b>	<b>1.6500e-003</b>		<b>57.2330</b>

**3.4 Grading - 2020**

**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					0.8933	0.0000	0.8933	0.4326	0.0000	0.4326			0.0000			0.0000
Off-Road	2.2295	22.0802	17.7259	0.0387		1.0068	1.0068		0.9421	0.9421		3,731.3043	3,731.3043	1.0526		3,757.6204
<b>Total</b>	<b>2.2295</b>	<b>22.0802</b>	<b>17.7259</b>	<b>0.0387</b>	<b>0.8933</b>	<b>1.0068</b>	<b>1.9000</b>	<b>0.4326</b>	<b>0.9421</b>	<b>1.3747</b>		<b>3,731.3043</b>	<b>3,731.3043</b>	<b>1.0526</b>		<b>3,757.6204</b>



Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.4 Grading - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8661	59.2080	13.6892	0.1910	4.6688	0.2346	4.9034	1.2790	0.2245	1.5035		20,727.48 47	20,727.48 47	1.3100		20,760.23 45
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	0.0583	0.0394	0.5299	1.4900e-003	0.1453	1.1100e-003	0.1464	0.0385	1.0200e-003	0.0396		148.6987	148.6987	4.2900e-003		148.8059
<b>Total</b>	<b>1.9244</b>	<b>59.2474</b>	<b>14.2191</b>	<b>0.1925</b>	<b>4.8141</b>	<b>0.2357</b>	<b>5.0498</b>	<b>1.3176</b>	<b>0.2255</b>	<b>1.5430</b>		<b>20,876.18 34</b>	<b>20,876.18 34</b>	<b>1.3143</b>		<b>20,909.04 03</b>

**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					0.4020	0.0000	0.4020	0.1947	0.0000	0.1947			0.0000			0.0000
Off-Road	2.2295	22.0802	17.7259	0.0387		1.0068	1.0068		0.9421	0.9421	0.0000	3,731.304 3	3,731.304 3	1.0526		3,757.620 4
<b>Total</b>	<b>2.2295</b>	<b>22.0802</b>	<b>17.7259</b>	<b>0.0387</b>	<b>0.4020</b>	<b>1.0068</b>	<b>1.4088</b>	<b>0.1947</b>	<b>0.9421</b>	<b>1.1368</b>	<b>0.0000</b>	<b>3,731.304 3</b>	<b>3,731.304 3</b>	<b>1.0526</b>		<b>3,757.620 4</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.4 Grading - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8661	59.2080	13.6892	0.1910	4.6688	0.2346	4.9034	1.2790	0.2245	1.5035		20,727.48 47	20,727.48 47	1.3100		20,760.23 45
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	0.0583	0.0394	0.5299	1.4900e-003	0.1453	1.1100e-003	0.1464	0.0385	1.0200e-003	0.0396		148.6987	148.6987	4.2900e-003		148.8059
<b>Total</b>	<b>1.9244</b>	<b>59.2474</b>	<b>14.2191</b>	<b>0.1925</b>	<b>4.8141</b>	<b>0.2357</b>	<b>5.0498</b>	<b>1.3176</b>	<b>0.2255</b>	<b>1.5430</b>		<b>20,876.18 34</b>	<b>20,876.18 34</b>	<b>1.3143</b>		<b>20,909.04 03</b>

**3.5 Building Construction - 2020**

**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	1.5779	14.8332	10.7899	0.0202		0.7556	0.7556		0.7021	0.7021		1,915.615 7	1,915.615 7	0.5831		1,930.193 6
<b>Total</b>	<b>1.5779</b>	<b>14.8332</b>	<b>10.7899</b>	<b>0.0202</b>		<b>0.7556</b>	<b>0.7556</b>		<b>0.7021</b>	<b>0.7021</b>		<b>1,915.615 7</b>	<b>1,915.615 7</b>	<b>0.5831</b>		<b>1,930.193 6</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.5 Building Construction - 2020**

**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	3.3200e-003	0.1053	0.0256	2.6000e-004	6.4000e-003	5.2000e-004	6.9200e-003	1.8400e-003	5.0000e-004	2.3400e-003		27.2791	27.2791	1.7500e-003			27.3228
Worker	8.9700e-003	6.0600e-003	0.0815	2.3000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		22.8767	22.8767	6.6000e-004			22.8932
<b>Total</b>	<b>0.0123</b>	<b>0.1114</b>	<b>0.1071</b>	<b>4.9000e-004</b>	<b>0.0288</b>	<b>6.9000e-004</b>	<b>0.0295</b>	<b>7.7700e-003</b>	<b>6.6000e-004</b>	<b>8.4300e-003</b>		<b>50.1559</b>	<b>50.1559</b>	<b>2.4100e-003</b>			<b>50.2160</b>

**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	1.5779	14.8332	10.7899	0.0202		0.7556	0.7556		0.7021	0.7021	0.0000	1,915.6157	1,915.6157	0.5831			1,930.1936
<b>Total</b>	<b>1.5779</b>	<b>14.8332</b>	<b>10.7899</b>	<b>0.0202</b>		<b>0.7556</b>	<b>0.7556</b>		<b>0.7021</b>	<b>0.7021</b>	<b>0.0000</b>	<b>1,915.6157</b>	<b>1,915.6157</b>	<b>0.5831</b>			<b>1,930.1936</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.5 Building Construction - 2020**

**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	3.3200e-003	0.1053	0.0256	2.6000e-004	6.4000e-003	5.2000e-004	6.9200e-003	1.8400e-003	5.0000e-004	2.3400e-003		27.2791	27.2791	1.7500e-003		27.3228
Worker	8.9700e-003	6.0600e-003	0.0815	2.3000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		22.8767	22.8767	6.6000e-004		22.8932
<b>Total</b>	<b>0.0123</b>	<b>0.1114</b>	<b>0.1071</b>	<b>4.9000e-004</b>	<b>0.0288</b>	<b>6.9000e-004</b>	<b>0.0295</b>	<b>7.7700e-003</b>	<b>6.6000e-004</b>	<b>8.4300e-003</b>		<b>50.1559</b>	<b>50.1559</b>	<b>2.4100e-003</b>		<b>50.2160</b>

**3.5 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	1.4207	13.3576	10.5812	0.0202		0.6505	0.6505		0.6044	0.6044		1,915.9197	1,915.9197	0.5796		1,930.4088
<b>Total</b>	<b>1.4207</b>	<b>13.3576</b>	<b>10.5812</b>	<b>0.0202</b>		<b>0.6505</b>	<b>0.6505</b>		<b>0.6044</b>	<b>0.6044</b>		<b>1,915.9197</b>	<b>1,915.9197</b>	<b>0.5796</b>		<b>1,930.4088</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.5 Building Construction - 2021**

**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	2.8100e-003	0.0958	0.0233	2.5000e-004	6.4000e-003	2.0000e-004	6.5900e-003	1.8400e-003	1.9000e-004	2.0300e-003		27.0744	27.0744	1.6700e-003		27.1162
Worker	8.3700e-003	5.4600e-003	0.0751	2.2000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.5000e-004	6.0800e-003		22.1380	22.1380	6.0000e-004		22.1529
<b>Total</b>	<b>0.0112</b>	<b>0.1012</b>	<b>0.0983</b>	<b>4.7000e-004</b>	<b>0.0288</b>	<b>3.7000e-004</b>	<b>0.0291</b>	<b>7.7700e-003</b>	<b>3.4000e-004</b>	<b>8.1100e-003</b>		<b>49.2123</b>	<b>49.2123</b>	<b>2.2700e-003</b>		<b>49.2691</b>

**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	1.4207	13.3576	10.5812	0.0202		0.6505	0.6505		0.6044	0.6044	0.0000	1,915.9197	1,915.9197	0.5796		1,930.4088
<b>Total</b>	<b>1.4207</b>	<b>13.3576</b>	<b>10.5812</b>	<b>0.0202</b>		<b>0.6505</b>	<b>0.6505</b>		<b>0.6044</b>	<b>0.6044</b>	<b>0.0000</b>	<b>1,915.9197</b>	<b>1,915.9197</b>	<b>0.5796</b>		<b>1,930.4088</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.5 Building Construction - 2021**

**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	2.8100e-003	0.0958	0.0233	2.5000e-004	6.4000e-003	2.0000e-004	6.5900e-003	1.8400e-003	1.9000e-004	2.0300e-003		27.0744	27.0744	1.6700e-003		27.1162
Worker	8.3700e-003	5.4600e-003	0.0751	2.2000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.5000e-004	6.0800e-003		22.1380	22.1380	6.0000e-004		22.1529
<b>Total</b>	<b>0.0112</b>	<b>0.1012</b>	<b>0.0983</b>	<b>4.7000e-004</b>	<b>0.0288</b>	<b>3.7000e-004</b>	<b>0.0291</b>	<b>7.7700e-003</b>	<b>3.4000e-004</b>	<b>8.1100e-003</b>		<b>49.2123</b>	<b>49.2123</b>	<b>2.2700e-003</b>		<b>49.2691</b>

**3.6 Paving - 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	0.5892	5.8893	6.3961	9.6600e-003		0.3212	0.3212		0.2964	0.2964		921.6808	921.6808	0.2898		928.9251
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.5892</b>	<b>5.8893</b>	<b>6.3961</b>	<b>9.6600e-003</b>		<b>0.3212</b>	<b>0.3212</b>		<b>0.2964</b>	<b>0.2964</b>		<b>921.6808</b>	<b>921.6808</b>	<b>0.2898</b>		<b>928.9251</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.6 Paving - 2021**

**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	0.0419	0.0273	0.3755	1.1100e-003	0.1118	8.3000e-004	0.1126	0.0296	7.6000e-004	0.0304		110.6898	110.6898	2.9800e-003		110.7644
<b>Total</b>	<b>0.0419</b>	<b>0.0273</b>	<b>0.3755</b>	<b>1.1100e-003</b>	<b>0.1118</b>	<b>8.3000e-004</b>	<b>0.1126</b>	<b>0.0296</b>	<b>7.6000e-004</b>	<b>0.0304</b>		<b>110.6898</b>	<b>110.6898</b>	<b>2.9800e-003</b>		<b>110.7644</b>

**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	0.5892	5.8893	6.3961	9.6600e-003		0.3212	0.3212		0.2964	0.2964	0.0000	921.6808	921.6808	0.2898		928.9251
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.5892</b>	<b>5.8893</b>	<b>6.3961</b>	<b>9.6600e-003</b>		<b>0.3212</b>	<b>0.3212</b>		<b>0.2964</b>	<b>0.2964</b>	<b>0.0000</b>	<b>921.6808</b>	<b>921.6808</b>	<b>0.2898</b>		<b>928.9251</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.6 Paving - 2021**

**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	0.0419	0.0273	0.3755	1.1100e-003	0.1118	8.3000e-004	0.1126	0.0296	7.6000e-004	0.0304		110.6898	110.6898	2.9800e-003		110.7644
<b>Total</b>	<b>0.0419</b>	<b>0.0273</b>	<b>0.3755</b>	<b>1.1100e-003</b>	<b>0.1118</b>	<b>8.3000e-004</b>	<b>0.1126</b>	<b>0.0296</b>	<b>7.6000e-004</b>	<b>0.0304</b>		<b>110.6898</b>	<b>110.6898</b>	<b>2.9800e-003</b>		<b>110.7644</b>

**3.7 Architectural Coating - 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					
Archit. Coating	2.2248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
<b>Total</b>	<b>2.4437</b>	<b>1.5268</b>	<b>1.8176</b>	<b>2.9700e-003</b>		<b>0.0941</b>	<b>0.0941</b>		<b>0.0941</b>	<b>0.0941</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0193</b>		<b>281.9309</b>



Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.7 Architectural Coating - 2021**

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**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	2.2248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
<b>Total</b>	<b>2.4437</b>	<b>1.5268</b>	<b>1.8176</b>	<b>2.9700e-003</b>		<b>0.0941</b>	<b>0.0941</b>		<b>0.0941</b>	<b>0.0941</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0193</b>		<b>281.9309</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**3.7 Architectural Coating - 2021**

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

Twin Lakes Water Tank - South Coast Air Basin, Summer

	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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.551391	0.043340	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924

5.0 Energy Detail

Historical Energy Use: N

Twin Lakes Water Tank - South Coast Air Basin, Summer

**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	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		28.0032	28.0032	5.4000e-004	5.1000e-004	28.1696
NaturalGas Unmitigated	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		28.0032	28.0032	5.4000e-004	5.1000e-004	28.1696

**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					
General Light Industry	238.027	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		28.0032	28.0032	5.4000e-004	5.1000e-004	28.1696
<b>Total</b>		<b>2.5700e-003</b>	<b>0.0233</b>	<b>0.0196</b>	<b>1.4000e-004</b>		<b>1.7700e-003</b>	<b>1.7700e-003</b>		<b>1.7700e-003</b>	<b>1.7700e-003</b>		<b>28.0032</b>	<b>28.0032</b>	<b>5.4000e-004</b>	<b>5.1000e-004</b>	<b>28.1696</b>

Twin Lakes Water Tank - South Coast Air Basin, Summer

**5.2 Energy by Land Use - NaturalGas**

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.238027	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		28.0032	28.0032	5.4000e-004	5.1000e-004	28.1696
<b>Total</b>		<b>2.5700e-003</b>	<b>0.0233</b>	<b>0.0196</b>	<b>1.4000e-004</b>		<b>1.7700e-003</b>	<b>1.7700e-003</b>		<b>1.7700e-003</b>	<b>1.7700e-003</b>		<b>28.0032</b>	<b>28.0032</b>	<b>5.4000e-004</b>	<b>5.1000e-004</b>	<b>28.1696</b>

**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	0.1073	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0500e-003	1.0500e-003	0.0000		1.1200e-003
Unmitigated	0.1073	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0500e-003	1.0500e-003	0.0000		1.1200e-003

Twin Lakes Water Tank - South Coast Air Basin, Summer

**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	0.0122					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0950					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0500e-003	1.0500e-003	0.0000		1.1200e-003
<b>Total</b>	<b>0.1073</b>	<b>0.0000</b>	<b>4.9000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>1.0500e-003</b>	<b>1.0500e-003</b>	<b>0.0000</b>		<b>1.1200e-003</b>

**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	0.0122					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0950					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0500e-003	1.0500e-003	0.0000		1.1200e-003
<b>Total</b>	<b>0.1073</b>	<b>0.0000</b>	<b>4.9000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>1.0500e-003</b>	<b>1.0500e-003</b>	<b>0.0000</b>		<b>1.1200e-003</b>

**7.0 Water Detail**

Twin Lakes Water Tank - South Coast Air Basin, Summer

**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
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**10.0 Stationary Equipment**

**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	26	700	0.73	Diesel

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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Twin Lakes Water Tank - South Coast Air Basin, Summer

**10.1 Stationary Sources**

**Unmitigated/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	
Equipment Type	lb/day										lb/day						
Emergency Generator - Diesel (600 - 750 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>			<b>0.0000</b>

**11.0 Vegetation**

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Twin Lakes Water Tank - South Coast Air Basin, Annual

**Twin Lakes Water Tank  
South Coast Air Basin, Annual**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	4.80	1000sqft	0.21	4,800.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	12			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	702.44	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

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Project Characteristics -

Land Use - 0.21 acre grading area. 4,800 sf tank footprint.

Construction Phase - 5 days demo. 4 days grading. 20 days coating

Off-road Equipment -

Off-road Equipment - welder, loader

Off-road Equipment - excavator, loader, water truck

Off-road Equipment - loader, skid steer, excavator, loader, water truck

Off-road Equipment - 1 mixer

Off-road Equipment - dozer

Trips and VMT - 14 cy haul trucks. 50 mile export distance

Demolition - 200 tons demo

Grading - .21 acres grading. 3,000 cy export

Architectural Coating -

Vehicle Trips - No daily trips

Woodstoves -

Construction Off-road Equipment Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps - standby diesel generator 600-750 hp. 0.5 hr/week

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	4.00
tblConstructionPhase	PhaseEndDate	5/26/2021	6/11/2021
tblConstructionPhase	PhaseEndDate	5/12/2021	5/7/2021
tblConstructionPhase	PhaseEndDate	12/18/2020	12/11/2020
tblConstructionPhase	PhaseEndDate	12/23/2020	12/18/2020
tblConstructionPhase	PhaseEndDate	5/19/2021	5/14/2021

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tblConstructionPhase	PhaseEndDate	12/21/2020	12/14/2020
tblConstructionPhase	PhaseStartDate	5/20/2021	5/17/2021
tblConstructionPhase	PhaseStartDate	12/24/2020	12/21/2020
tblConstructionPhase	PhaseStartDate	12/22/2020	12/15/2020
tblConstructionPhase	PhaseStartDate	5/13/2021	5/10/2021
tblConstructionPhase	PhaseStartDate	12/19/2020	12/14/2020
tblGrading	AcresOfGrading	0.00	0.21
tblGrading	AcresOfGrading	0.50	0.00
tblGrading	MaterialExported	0.00	3,000.00
tblLandUse	LotAcreage	0.11	0.21
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	700.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	26.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	375.00	428.00
tblTripsAndVMT	WorkerTripNumber	18.00	8.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00
tblTripsAndVMT	WorkerTripNumber	20.00	13.00
tblVehicleTrips	ST_TR	1.32	0.00

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tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

**2.0 Emissions Summary**

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	12-7-2020	3-6-2021	0.5863	0.5863
2	3-7-2021	6-6-2021	0.3712	0.3712
3	6-7-2021	9-6-2021	0.0071	0.0071
		Highest	0.5863	0.5863

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	0.0196	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.3000e-004
Energy	4.7000e-004	4.2600e-003	3.5800e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	21.6124	21.6124	7.9000e-004	2.3000e-004	21.7007
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
Stationary	0.0149	0.0417	0.0381	7.0000e-005		2.2000e-003	2.2000e-003		2.2000e-003	2.2000e-003	0.0000	6.9305	6.9305	9.7000e-004	0.0000	6.9548
Waste						0.0000	0.0000		0.0000	0.0000	1.2078	0.0000	1.2078	0.0714	0.0000	2.9923
Water						0.0000	0.0000		0.0000	0.0000	0.3522	4.6051	4.9573	0.0364	8.9000e-004	6.1325
<b>Total</b>	<b>0.0350</b>	<b>0.0460</b>	<b>0.0417</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>2.5200e-003</b>	<b>2.5200e-003</b>	<b>0.0000</b>	<b>2.5200e-003</b>	<b>2.5200e-003</b>	<b>1.5600</b>	<b>33.1482</b>	<b>34.7081</b>	<b>0.1095</b>	<b>1.1200e-003</b>	<b>37.7804</b>

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**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	0.0196	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.3000e-004
Energy	4.7000e-004	4.2600e-003	3.5800e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	21.6124	21.6124	7.9000e-004	2.3000e-004	21.7007
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
Stationary	0.0149	0.0417	0.0381	7.0000e-005		2.2000e-003	2.2000e-003		2.2000e-003	2.2000e-003	0.0000	6.9305	6.9305	9.7000e-004	0.0000	6.9548
Waste						0.0000	0.0000		0.0000	0.0000	1.2078	0.0000	1.2078	0.0714	0.0000	2.9923
Water						0.0000	0.0000		0.0000	0.0000	0.3522	4.6051	4.9573	0.0364	8.9000e-004	6.1325
<b>Total</b>	<b>0.0350</b>	<b>0.0460</b>	<b>0.0417</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>2.5200e-003</b>	<b>2.5200e-003</b>	<b>0.0000</b>	<b>2.5200e-003</b>	<b>2.5200e-003</b>	<b>1.5600</b>	<b>33.1482</b>	<b>34.7081</b>	<b>0.1095</b>	<b>1.1200e-003</b>	<b>37.7804</b>

	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
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**3.0 Construction Detail**

**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/7/2020	12/11/2020	5	5	
2	Site Preparation	Site Preparation	12/14/2020	12/14/2020	5	1	
3	Grading	Grading	12/15/2020	12/18/2020	5	4	
4	Building Construction	Building Construction	12/21/2020	5/7/2021	5	100	
5	Paving	Paving	5/10/2021	5/14/2021	5	5	
6	Architectural Coating	Architectural Coating	5/17/2021	6/11/2021	5	20	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0.21**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 7,200; Non-Residential Outdoor: 2,400; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**



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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Loaders	1	8.00	203	0.36
Demolition	Off-Highway Trucks	1	8.00	402	0.38
Grading	Excavators	1	8.00	158	0.38
Grading	Off-Highway Trucks	1	8.00	402	0.38
Grading	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Rubber Tired Loaders	1	8.00	203	0.36

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**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
Demolition	7	8.00	0.00	20.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	13.00	0.00	428.00	14.70	6.90	50.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	2.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	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 Demolition - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.1400e-003	0.0000	2.1400e-003	3.2000e-004	0.0000	3.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3700e-003	0.0525	0.0408	9.0000e-005		2.4000e-003	2.4000e-003		2.2500e-003	2.2500e-003	0.0000	8.0085	8.0085	2.2400e-003	0.0000	8.0645
<b>Total</b>	<b>5.3700e-003</b>	<b>0.0525</b>	<b>0.0408</b>	<b>9.0000e-005</b>	<b>2.1400e-003</b>	<b>2.4000e-003</b>	<b>4.5400e-003</b>	<b>3.2000e-004</b>	<b>2.2500e-003</b>	<b>2.5700e-003</b>	<b>0.0000</b>	<b>8.0085</b>	<b>8.0085</b>	<b>2.2400e-003</b>	<b>0.0000</b>	<b>8.0645</b>

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**3.2 Demolition - 2020**

**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	8.0000e-005	2.8800e-003	6.0000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7587	0.7587	5.0000e-005	0.0000	0.7601
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	9.0000e-005	7.0000e-005	7.6000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1977	0.1977	1.0000e-005	0.0000	0.1979
<b>Total</b>	<b>1.7000e-004</b>	<b>2.9500e-003</b>	<b>1.3600e-003</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>1.0000e-005</b>	<b>4.0000e-004</b>	<b>1.1000e-004</b>	<b>1.0000e-005</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>0.9565</b>	<b>0.9565</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.9580</b>

**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					9.6000e-004	0.0000	9.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3700e-003	0.0525	0.0408	9.0000e-005		2.4000e-003	2.4000e-003		2.2500e-003	2.2500e-003	0.0000	8.0085	8.0085	2.2400e-003	0.0000	8.0645
<b>Total</b>	<b>5.3700e-003</b>	<b>0.0525</b>	<b>0.0408</b>	<b>9.0000e-005</b>	<b>9.6000e-004</b>	<b>2.4000e-003</b>	<b>3.3600e-003</b>	<b>1.5000e-004</b>	<b>2.2500e-003</b>	<b>2.4000e-003</b>	<b>0.0000</b>	<b>8.0085</b>	<b>8.0085</b>	<b>2.2400e-003</b>	<b>0.0000</b>	<b>8.0645</b>

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**3.2 Demolition - 2020**

**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	8.0000e-005	2.8800e-003	6.0000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7587	0.7587	5.0000e-005	0.0000	0.7601
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	9.0000e-005	7.0000e-005	7.6000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1977	0.1977	1.0000e-005	0.0000	0.1979
<b>Total</b>	<b>1.7000e-004</b>	<b>2.9500e-003</b>	<b>1.3600e-003</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>1.0000e-005</b>	<b>4.0000e-004</b>	<b>1.1000e-004</b>	<b>1.0000e-005</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>0.9565</b>	<b>0.9565</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.9580</b>

**3.3 Site Preparation - 2020**

**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					3.0100e-003	0.0000	3.0100e-003	1.6600e-003	0.0000	1.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8000e-004	9.8800e-003	4.1100e-003	1.0000e-005		4.5000e-004	4.5000e-004		4.1000e-004	4.1000e-004	0.0000	0.8032	0.8032	2.6000e-004	0.0000	0.8097
<b>Total</b>	<b>8.8000e-004</b>	<b>9.8800e-003</b>	<b>4.1100e-003</b>	<b>1.0000e-005</b>	<b>3.0100e-003</b>	<b>4.5000e-004</b>	<b>3.4600e-003</b>	<b>1.6600e-003</b>	<b>4.1000e-004</b>	<b>2.0700e-003</b>	<b>0.0000</b>	<b>0.8032</b>	<b>0.8032</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>0.8097</b>

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**3.3 Site Preparation - 2020**

**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	1.0000e-005	1.0000e-005	9.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0247	0.0247	0.0000	0.0000	0.0247
<b>Total</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0247</b>	<b>0.0247</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0247</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3500e-003	0.0000	1.3500e-003	7.4000e-004	0.0000	7.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8000e-004	9.8800e-003	4.1100e-003	1.0000e-005		4.5000e-004	4.5000e-004		4.1000e-004	4.1000e-004	0.0000	0.8032	0.8032	2.6000e-004	0.0000	0.8097
<b>Total</b>	<b>8.8000e-004</b>	<b>9.8800e-003</b>	<b>4.1100e-003</b>	<b>1.0000e-005</b>	<b>1.3500e-003</b>	<b>4.5000e-004</b>	<b>1.8000e-003</b>	<b>7.4000e-004</b>	<b>4.1000e-004</b>	<b>1.1500e-003</b>	<b>0.0000</b>	<b>0.8032</b>	<b>0.8032</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>0.8097</b>

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**3.3 Site Preparation - 2020**

**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	1.0000e-005	1.0000e-005	9.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0247	0.0247	0.0000	0.0000	0.0247
<b>Total</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0247</b>	<b>0.0247</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0247</b>

**3.4 Grading - 2020**

**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					1.7900e-003	0.0000	1.7900e-003	8.7000e-004	0.0000	8.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4600e-003	0.0442	0.0355	8.0000e-005		2.0100e-003	2.0100e-003		1.8800e-003	1.8800e-003	0.0000	6.7700	6.7700	1.9100e-003	0.0000	6.8177
<b>Total</b>	<b>4.4600e-003</b>	<b>0.0442</b>	<b>0.0355</b>	<b>8.0000e-005</b>	<b>1.7900e-003</b>	<b>2.0100e-003</b>	<b>3.8000e-003</b>	<b>8.7000e-004</b>	<b>1.8800e-003</b>	<b>2.7500e-003</b>	<b>0.0000</b>	<b>6.7700</b>	<b>6.7700</b>	<b>1.9100e-003</b>	<b>0.0000</b>	<b>6.8177</b>

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**3.4 Grading - 2020**

**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	3.7500e-003	0.1237	0.0277	3.8000e-004	9.1900e-003	4.7000e-004	9.6600e-003	2.5200e-003	4.5000e-004	2.9700e-003	0.0000	37.4900	37.4900	2.4000e-003	0.0000	37.5499
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	1.2000e-004	9.0000e-005	9.9000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2570	0.2570	1.0000e-005	0.0000	0.2572
<b>Total</b>	<b>3.8700e-003</b>	<b>0.1238</b>	<b>0.0287</b>	<b>3.8000e-004</b>	<b>9.4800e-003</b>	<b>4.7000e-004</b>	<b>9.9500e-003</b>	<b>2.6000e-003</b>	<b>4.5000e-004</b>	<b>3.0500e-003</b>	<b>0.0000</b>	<b>37.7471</b>	<b>37.7471</b>	<b>2.4100e-003</b>	<b>0.0000</b>	<b>37.8071</b>

**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					8.0000e-004	0.0000	8.0000e-004	3.9000e-004	0.0000	3.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4600e-003	0.0442	0.0355	8.0000e-005		2.0100e-003	2.0100e-003		1.8800e-003	1.8800e-003	0.0000	6.7700	6.7700	1.9100e-003	0.0000	6.8177
<b>Total</b>	<b>4.4600e-003</b>	<b>0.0442</b>	<b>0.0355</b>	<b>8.0000e-005</b>	<b>8.0000e-004</b>	<b>2.0100e-003</b>	<b>2.8100e-003</b>	<b>3.9000e-004</b>	<b>1.8800e-003</b>	<b>2.2700e-003</b>	<b>0.0000</b>	<b>6.7700</b>	<b>6.7700</b>	<b>1.9100e-003</b>	<b>0.0000</b>	<b>6.8177</b>

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**3.4 Grading - 2020**

**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	3.7500e-003	0.1237	0.0277	3.8000e-004	9.1900e-003	4.7000e-004	9.6600e-003	2.5200e-003	4.5000e-004	2.9700e-003	0.0000	37.4900	37.4900	2.4000e-003	0.0000	37.5499
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	1.2000e-004	9.0000e-005	9.9000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2570	0.2570	1.0000e-005	0.0000	0.2572
<b>Total</b>	<b>3.8700e-003</b>	<b>0.1238</b>	<b>0.0287</b>	<b>3.8000e-004</b>	<b>9.4800e-003</b>	<b>4.7000e-004</b>	<b>9.9500e-003</b>	<b>2.6000e-003</b>	<b>4.5000e-004</b>	<b>3.0500e-003</b>	<b>0.0000</b>	<b>37.7471</b>	<b>37.7471</b>	<b>2.4100e-003</b>	<b>0.0000</b>	<b>37.8071</b>

**3.5 Building Construction - 2020**

**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	7.1000e-003	0.0668	0.0486	9.0000e-005		3.4000e-003	3.4000e-003		3.1600e-003	3.1600e-003	0.0000	7.8202	7.8202	2.3800e-003	0.0000	7.8797
<b>Total</b>	<b>7.1000e-003</b>	<b>0.0668</b>	<b>0.0486</b>	<b>9.0000e-005</b>		<b>3.4000e-003</b>	<b>3.4000e-003</b>		<b>3.1600e-003</b>	<b>3.1600e-003</b>	<b>0.0000</b>	<b>7.8202</b>	<b>7.8202</b>	<b>2.3800e-003</b>	<b>0.0000</b>	<b>7.8797</b>



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**3.5 Building Construction - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	4.8000e-004	1.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1101	0.1101	1.0000e-005	0.0000	0.1103
Worker	4.0000e-005	3.0000e-005	3.4000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0890	0.0890	0.0000	0.0000	0.0890
<b>Total</b>	<b>6.0000e-005</b>	<b>5.1000e-004</b>	<b>4.6000e-004</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.1991</b>	<b>0.1991</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1993</b>

**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	7.1000e-003	0.0668	0.0486	9.0000e-005		3.4000e-003	3.4000e-003		3.1600e-003	3.1600e-003	0.0000	7.8202	7.8202	2.3800e-003	0.0000	7.8797
<b>Total</b>	<b>7.1000e-003</b>	<b>0.0668</b>	<b>0.0486</b>	<b>9.0000e-005</b>		<b>3.4000e-003</b>	<b>3.4000e-003</b>		<b>3.1600e-003</b>	<b>3.1600e-003</b>	<b>0.0000</b>	<b>7.8202</b>	<b>7.8202</b>	<b>2.3800e-003</b>	<b>0.0000</b>	<b>7.8797</b>

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**3.5 Building Construction - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	4.8000e-004	1.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1101	0.1101	1.0000e-005	0.0000	0.1103
Worker	4.0000e-005	3.0000e-005	3.4000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0890	0.0890	0.0000	0.0000	0.0890
<b>Total</b>	<b>6.0000e-005</b>	<b>5.1000e-004</b>	<b>4.6000e-004</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.1991</b>	<b>0.1991</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1993</b>

**3.5 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	0.0646	0.6078	0.4814	9.2000e-004		0.0296	0.0296		0.0275	0.0275	0.0000	79.0832	79.0832	0.0239	0.0000	79.6813
<b>Total</b>	<b>0.0646</b>	<b>0.6078</b>	<b>0.4814</b>	<b>9.2000e-004</b>		<b>0.0296</b>	<b>0.0296</b>		<b>0.0275</b>	<b>0.0275</b>	<b>0.0000</b>	<b>79.0832</b>	<b>79.0832</b>	<b>0.0239</b>	<b>0.0000</b>	<b>79.6813</b>

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**3.5 Building Construction - 2021**

**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	1.3000e-004	4.4300e-003	1.1200e-003	1.0000e-005	2.9000e-004	1.0000e-005	3.0000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.1048	1.1048	7.0000e-005	0.0000	1.1066
Worker	3.8000e-004	2.8000e-004	3.1800e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0100e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8706	0.8706	2.0000e-005	0.0000	0.8711
<b>Total</b>	<b>5.1000e-004</b>	<b>4.7100e-003</b>	<b>4.3000e-003</b>	<b>2.0000e-005</b>	<b>1.2900e-003</b>	<b>2.0000e-005</b>	<b>1.3100e-003</b>	<b>3.5000e-004</b>	<b>2.0000e-005</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>1.9753</b>	<b>1.9753</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>1.9777</b>

**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	0.0646	0.6078	0.4814	9.2000e-004		0.0296	0.0296		0.0275	0.0275	0.0000	79.0831	79.0831	0.0239	0.0000	79.6812
<b>Total</b>	<b>0.0646</b>	<b>0.6078</b>	<b>0.4814</b>	<b>9.2000e-004</b>		<b>0.0296</b>	<b>0.0296</b>		<b>0.0275</b>	<b>0.0275</b>	<b>0.0000</b>	<b>79.0831</b>	<b>79.0831</b>	<b>0.0239</b>	<b>0.0000</b>	<b>79.6812</b>

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**3.5 Building Construction - 2021**

**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	1.3000e-004	4.4300e-003	1.1200e-003	1.0000e-005	2.9000e-004	1.0000e-005	3.0000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.1048	1.1048	7.0000e-005	0.0000	1.1066
Worker	3.8000e-004	2.8000e-004	3.1800e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0100e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8706	0.8706	2.0000e-005	0.0000	0.8711
<b>Total</b>	<b>5.1000e-004</b>	<b>4.7100e-003</b>	<b>4.3000e-003</b>	<b>2.0000e-005</b>	<b>1.2900e-003</b>	<b>2.0000e-005</b>	<b>1.3100e-003</b>	<b>3.5000e-004</b>	<b>2.0000e-005</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>1.9753</b>	<b>1.9753</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>1.9777</b>

**3.6 Paving - 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	1.4700e-003	0.0147	0.0160	2.0000e-005		8.0000e-004	8.0000e-004		7.4000e-004	7.4000e-004	0.0000	2.0903	2.0903	6.6000e-004	0.0000	2.1068
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.4700e-003</b>	<b>0.0147</b>	<b>0.0160</b>	<b>2.0000e-005</b>		<b>8.0000e-004</b>	<b>8.0000e-004</b>		<b>7.4000e-004</b>	<b>7.4000e-004</b>	<b>0.0000</b>	<b>2.0903</b>	<b>2.0903</b>	<b>6.6000e-004</b>	<b>0.0000</b>	<b>2.1068</b>

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**3.6 Paving - 2021**

**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	1.0000e-004	8.0000e-005	8.7000e-004	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2392	0.2392	1.0000e-005	0.0000	0.2393
<b>Total</b>	<b>1.0000e-004</b>	<b>8.0000e-005</b>	<b>8.7000e-004</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>2.8000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2392</b>	<b>0.2392</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2393</b>

**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	1.4700e-003	0.0147	0.0160	2.0000e-005		8.0000e-004	8.0000e-004		7.4000e-004	7.4000e-004	0.0000	2.0903	2.0903	6.6000e-004	0.0000	2.1068
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.4700e-003</b>	<b>0.0147</b>	<b>0.0160</b>	<b>2.0000e-005</b>		<b>8.0000e-004</b>	<b>8.0000e-004</b>		<b>7.4000e-004</b>	<b>7.4000e-004</b>	<b>0.0000</b>	<b>2.0903</b>	<b>2.0903</b>	<b>6.6000e-004</b>	<b>0.0000</b>	<b>2.1068</b>

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**3.6 Paving - 2021**

**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	1.0000e-004	8.0000e-005	8.7000e-004	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2392	0.2392	1.0000e-005	0.0000	0.2393
<b>Total</b>	<b>1.0000e-004</b>	<b>8.0000e-005</b>	<b>8.7000e-004</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>2.8000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2392</b>	<b>0.2392</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2393</b>

**3.7 Architectural Coating - 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					
Archit. Coating	0.0223					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
<b>Total</b>	<b>0.0244</b>	<b>0.0153</b>	<b>0.0182</b>	<b>3.0000e-005</b>		<b>9.4000e-004</b>	<b>9.4000e-004</b>		<b>9.4000e-004</b>	<b>9.4000e-004</b>	<b>0.0000</b>	<b>2.5533</b>	<b>2.5533</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>2.5576</b>

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**3.7 Architectural Coating - 2021**

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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	0.0223					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
<b>Total</b>	<b>0.0244</b>	<b>0.0153</b>	<b>0.0182</b>	<b>3.0000e-005</b>		<b>9.4000e-004</b>	<b>9.4000e-004</b>		<b>9.4000e-004</b>	<b>9.4000e-004</b>	<b>0.0000</b>	<b>2.5533</b>	<b>2.5533</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>2.5576</b>

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**3.7 Architectural Coating - 2021**

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**



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	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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.551391	0.043340	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924

5.0 Energy Detail

Historical Energy Use: N

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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	16.9762	16.9762	7.0000e-004	1.5000e-004	17.0369
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	16.9762	16.9762	7.0000e-004	1.5000e-004	17.0369
NaturalGas Mitigated	4.7000e-004	4.2600e-003	3.5800e-003	3.0000e-005			3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	4.6363	4.6363	9.0000e-005	8.0000e-005	4.6638
NaturalGas Unmitigated	4.7000e-004	4.2600e-003	3.5800e-003	3.0000e-005			3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	4.6363	4.6363	9.0000e-005	8.0000e-005	4.6638

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					
General Light Industry	86880	4.7000e-004	4.2600e-003	3.5800e-003	3.0000e-005			3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	4.6363	4.6363	9.0000e-005	8.0000e-005	4.6638
<b>Total</b>		<b>4.7000e-004</b>	<b>4.2600e-003</b>	<b>3.5800e-003</b>	<b>3.0000e-005</b>			<b>3.2000e-004</b>	<b>3.2000e-004</b>		<b>3.2000e-004</b>	<b>3.2000e-004</b>	<b>4.6363</b>	<b>4.6363</b>	<b>9.0000e-005</b>	<b>8.0000e-005</b>	<b>4.6638</b>

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**5.2 Energy by Land Use - Natural Gas**

**Mitigated**

	Natural Gas 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					
General Light Industry	86880	4.7000e-004	4.2600e-003	3.5800e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.6363	4.6363	9.0000e-005	8.0000e-005	4.6638
<b>Total</b>		<b>4.7000e-004</b>	<b>4.2600e-003</b>	<b>3.5800e-003</b>	<b>3.0000e-005</b>		<b>3.2000e-004</b>	<b>3.2000e-004</b>		<b>3.2000e-004</b>	<b>3.2000e-004</b>	<b>0.0000</b>	<b>4.6363</b>	<b>4.6363</b>	<b>9.0000e-005</b>	<b>8.0000e-005</b>	<b>4.6638</b>

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	53280	16.9762	7.0000e-004	1.5000e-004	17.0369
<b>Total</b>		<b>16.9762</b>	<b>7.0000e-004</b>	<b>1.5000e-004</b>	<b>17.0369</b>

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**5.3 Energy by Land Use - Electricity**

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	53280	16.9762	7.0000e-004	1.5000e-004	17.0369
<b>Total</b>		<b>16.9762</b>	<b>7.0000e-004</b>	<b>1.5000e-004</b>	<b>17.0369</b>

**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	0.0196	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.3000e-004
Unmitigated	0.0196	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.3000e-004

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**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	2.2200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0173					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.3000e-004
<b>Total</b>	<b>0.0196</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.2000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.3000e-004</b>

**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	2.2200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0173					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.3000e-004
<b>Total</b>	<b>0.0196</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.2000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.3000e-004</b>

**7.0 Water Detail**

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**7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.9573	0.0364	8.9000e-004	6.1325
Unmitigated	4.9573	0.0364	8.9000e-004	6.1325

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	1.11 / 0	4.9573	0.0364	8.9000e-004	6.1325
<b>Total</b>		<b>4.9573</b>	<b>0.0364</b>	<b>8.9000e-004</b>	<b>6.1325</b>

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**7.2 Water by Land Use**

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	1.11 / 0	4.9573	0.0364	8.9000e-004	6.1325
<b>Total</b>		<b>4.9573</b>	<b>0.0364</b>	<b>8.9000e-004</b>	<b>6.1325</b>

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.2078	0.0714	0.0000	2.9923
Unmitigated	1.2078	0.0714	0.0000	2.9923

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**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	5.95	1.2078	0.0714	0.0000	2.9923
<b>Total</b>		<b>1.2078</b>	<b>0.0714</b>	<b>0.0000</b>	<b>2.9923</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	5.95	1.2078	0.0714	0.0000	2.9923
<b>Total</b>		<b>1.2078</b>	<b>0.0714</b>	<b>0.0000</b>	<b>2.9923</b>

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Twin Lakes Water Tank - South Coast Air Basin, Annual

**10.0 Stationary Equipment**

**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	26	700	0.73	Diesel

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**10.1 Stationary Sources**

**Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (600 - 750 HP)	0.0149	0.0417	0.0381	7.0000e-005		2.2000e-003	2.2000e-003		2.2000e-003	2.2000e-003	0.0000	6.9305	6.9305	9.7000e-004	0.0000	6.9548
<b>Total</b>	<b>0.0149</b>	<b>0.0417</b>	<b>0.0381</b>	<b>7.0000e-005</b>		<b>2.2000e-003</b>	<b>2.2000e-003</b>		<b>2.2000e-003</b>	<b>2.2000e-003</b>	<b>0.0000</b>	<b>6.9305</b>	<b>6.9305</b>	<b>9.7000e-004</b>	<b>0.0000</b>	<b>6.9548</b>

**11.0 Vegetation**

Construction Fuel Consumption Worksheet

Twin Lakes Water Tank Replacement

<b>Demo</b>			
<b>diesel</b>	<b>MT CO2</b>	<b>gasoline</b>	<b>MT CO2</b>
off road	8.00	worker trips	0.2
hauling	0.76		
<b>Subtotal</b>	<b>8.76</b>	<b>Subtotal</b>	<b>0.2</b>
<b>Grading</b>			
<b>diesel</b>	<b>MT CO2</b>	<b>gasoline</b>	<b>MT CO2</b>
off road	6.80	worker trips	0.26
hauling	37.50		
<b>Subtotal</b>	<b>44.30</b>	<b>Subtotal</b>	<b>0.26</b>
<b>Paving</b>			
<b>diesel</b>	<b>MT CO2</b>	<b>gasoline</b>	<b>MT CO2</b>
off road	2.09	worker trips	0.24
hauling	0.00		
<b>Subtotal</b>	<b>2.09</b>	<b>Subtotal</b>	<b>0.24</b>

<b>Site prep</b>			
<b>diesel</b>	<b>MT CO2</b>	<b>gasoline</b>	<b>MT CO2</b>
off road	0.8	worker trips	0.02
hauling	0		
<b>Subtotal</b>	<b>0.8</b>	<b>Subtotal</b>	<b>0.02</b>
<b>Building (*includes 2020 and 2021)</b>			
<b>diesel</b>	<b>MT CO2</b>	<b>gasoline</b>	<b>MT CO2</b>
off road	86.9	worker trips	0.96
vendor	1.21		
<b>Subtotal</b>	<b>88.11</b>	<b>Subtotal</b>	<b>0.96</b>
<b>Coating</b>			
<b>diesel</b>	<b>MT CO2</b>	<b>gasoline</b>	<b>MT CO2</b>
off road	2.55	worker trips	0.25
<b>Subtotal</b>	<b>2.55</b>	<b>Subtotal</b>	<b>0.25</b>

	<b>MT CO2</b>	<b>lbs CO2</b>	lbs per gallon
Total Diesel CO2	146.61	323,220	22.4
(assumes vendors use diesel)			
Total Gasoline CO2	1.9	4,255	19.6
<b>Total Diesel Gallons</b>	<b>14,429</b>		
<b>Total Gasoline Gallons</b>	<b>217</b>		

MTCO2 emissions for each phase as reported in CalEEMod "Annual" output sheets for Twin Lakes Water Tank (June 25, 2020)

lbs per gallon factors from U.S. Energy Information Administration, Environment Carbon Dioxide Emissions Coefficients, Release date: February 2, 2016.

## **APPENDIX B.1**

### **Biological Resources Data**



January 16, 2020

Las Virgenes Municipal Water District  
4232 Las Virgenes Road,  
Calabasas, CA 91302

Attn: Mr. John Zhao

Subj: Biological Resources Letter Report for the Las Virgenes Municipal Water District Twin Lakes Water Tank and Pump Station Upgrade Project (*Envicom Project No. 49-058-101*)

Dear Mr. Zhao:

This letter summarizes the methods and results of pre-project surveys to document the existing biological resources conditions at the Las Virgenes Municipal Water District (District) Twin Lakes Water Tank and Twin Lakes Pump Station Upgrade Project (project) site, including descriptions of plant communities, wildlife habitats, and special status species as well as a list of plant and wildlife species observed.

## PROJECT UNDERSTANDING

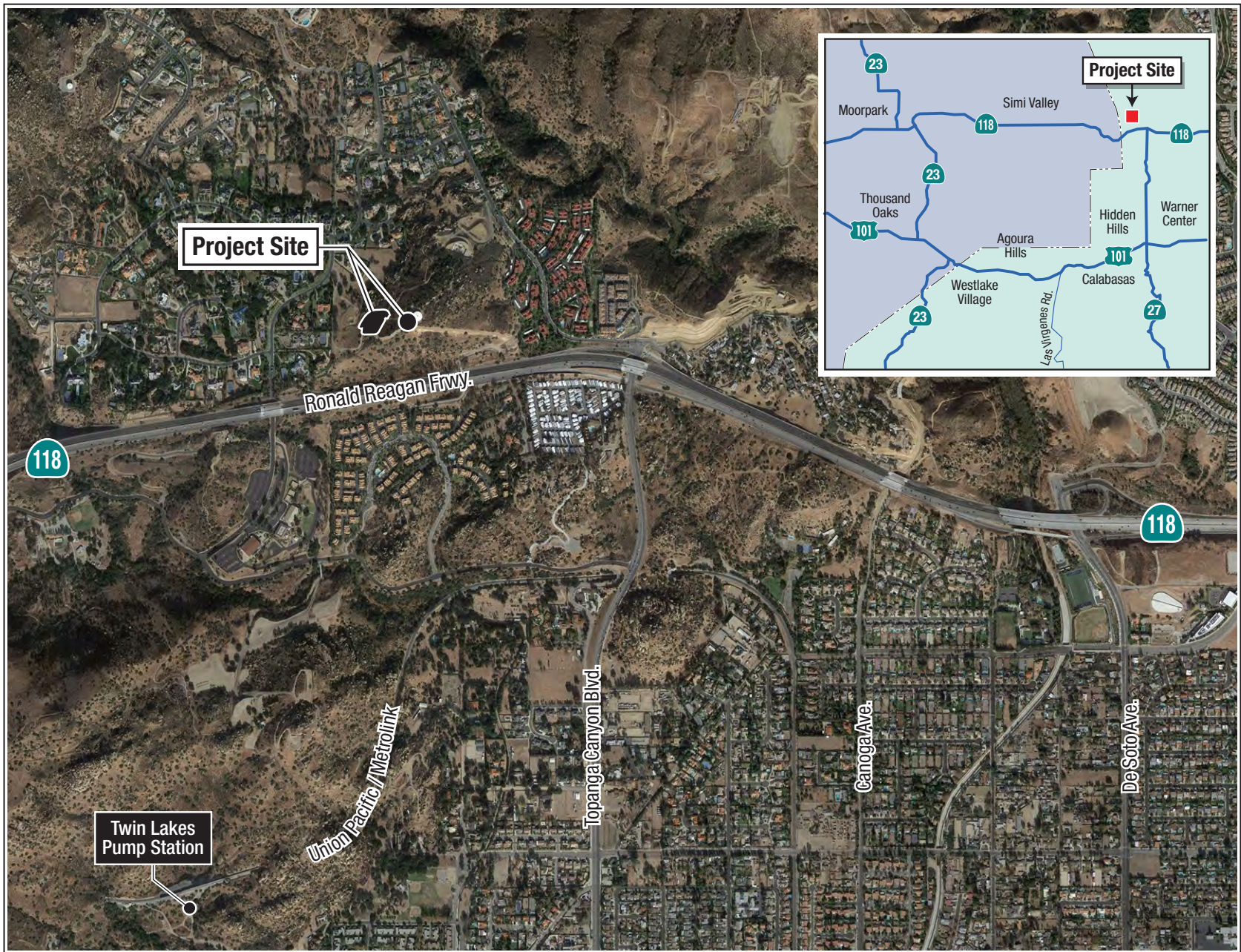
The Deerlake Ranch residential development (Amended Vesting Tentative Tract No. 53138) is currently under construction on approximately 232.87 acres in the hills northeast of the Topanga Canyon Boulevard interchange with the 118 Freeway in Los Angeles County, California. The development will include 314 single-family residential lots, one (1) recreation building, one (1) sheriff facility, and 31 open space/slope lots. The District will provide potable water supplies to serve the Deerlake Ranch development.

To adequately serve the Deerlake Ranch residential development, the District proposes the demolition and replacement of one of two (2) water storage tanks located on a hilltop approximately 1.5 miles southwest of the residential development in Chatsworth. Additionally, the project would include upgrades to the Twin Lakes Pump Station including installation and operation of additional pumps to maintain adequate pressures to serve the residential development.

The tank would be located approximately 550 feet due north of the 118 freeway, east of Iverson Road and west of Poema Place at the existing LVMWD water storage facility (see **Figure 1, Project Location Map**). The project would require grading of approximately 0.21 acres, primarily on land already developed where the current water tank to be replaced sits. A further 0.57 acres adjacent to the access road would be temporarily impacted for staging of equipment and materials for Project construction.

The existing Twin Lakes Pump Station is located south of the 118-freeway as shown in Figure 1, and occupies approximately 0.25 acres that has been graded level, is primarily paved and





Aerial Source: GoogleEarth Pro, Dec. 31, 2018.

developed with water pumps and related infrastructure, and is surrounded by fencing. As the project's upgrades to the pump station would occur within this fenced enclosure of previously disturbed area, no impacts are expected at the pump station, and the remainder of this report will focus on potential biological resources associated with the water tank site only.

## METHODS

A literature review was performed in preparation for the field survey that included information available in standard biological references (e.g., Baldwin et al. 2012; Sawyer, Keeler-Wolf, and Evens 2009; Reid 2006; Stebbins 2003; and, Prigge and Gibson 2013), and relevant lists and databases pertaining to the status and known occurrences of sensitive and special-status resources. The following sources were among those reviewed in preparation for field surveys, or that were consulted during preparation of this report (for a complete list see the references section):

- *Biogeographic Information and Observation System (BIOS)*, California Department of Fish and Wildlife (CDFW), data as of October 8, 2019;
- *California Natural Diversity Database (CNDDDB) Rarefind 5* report for the 7.5' USGS Oat Mountain quadrangle, CDFW, data as of October 8, 2019;
- *California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California* report for the 7.5' USGS Oat Mountain quadrangle and eight (8) adjacent quadrangles, CNPS, data as of October 8, 2019;
- *FWS Critical Habitat Mapper for Threatened and Endangered Species*, U.S. Fish and Wildlife Service (USFWS), data as of October 2019;
- *List of Special Vascular Plants, Bryophytes, and Lichens*, CDFW, October 2019;
- *Natural Communities List*, CDFW, October 2019; and,
- *Special Animals*, CDFW, August 2019.

Mr. David West, Envicom Corporation (Envicom) biologist conducted a survey of the disturbance footprint including a 20-foot buffer<sup>1</sup> (hereafter referred to as the Survey Area) on October 8, 2019. The biological survey was conducted between the hours of 9:00 a.m. and 11:00 a.m. in temperate, calm, and clear conditions (mid-70s°F) with light winds of 0 to 5 m.p.h. The survey involved a search for special-status and regulated biological resources, including rare, threatened, and endangered plant and wildlife species, natural communities of special concern, and locally protected species. All observed plant species were identified and recorded to the lowest taxonomic level possible. Plant nomenclature follows *The Jepson Manual: Vascular Plants of California, 2<sup>nd</sup> edition* (Baldwin B., et al. 2012). Surveys of non-vascular plants (lichens, mosses, liverworts, and hornworts) were not undertaken.

Plant species observed by Envicom during the site survey are presented as **Attachment 1**. Vertebrate wildlife species were identified during the survey by direct observation, sign (e.g., tracks, scat, or burrows), or vocalization. Wildlife species identification relied upon Reid (2006), Sibley (2009), and Stebbins (2003). **Attachment 2** provides a listing of vertebrate wildlife

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<sup>1</sup> A 20-foot survey area was established based on the level of proposed development and temporary work areas as illustrated in plans provided by PACE Water Engineering.

species observed during the survey. Several photographs were taken as a record of site conditions at the time of the survey, and are presented as **Plate 1, Representative Site Photographs**.

## RESULTS

### Vegetation / Land Cover Types

Plant communities were correlated with those plant communities included in the Manual of California Vegetation (Sawyer, Keeler-Wolf, and Evens 2009) habitat classifications and/or the Natural Communities List (CDFW, October 2019). These documents provide lists of plant communities in the State of California. In these documents, each plant community is assigned a conservation status rank (also known as “rarity rank”), which is used to determine the sensitivity of the plant community. Plant communities are classified based on plant species composition and abundance, as well as the underlying abiotic conditions of the stand, such as slope, aspect, or soil type. **Figure 2, Vegetation Map** shows the plant communities and land cover types within the Survey Area.

Plant communities with global or state status ranks of G1 through G3, or S1 through S3, respectively, are considered to be sensitive, and are referred to as “natural communities of special concern.” In addition, a review of the California Department of Fish and Wildlife’s Natural Diversity Data Base (CNDDDB) Rarefind 5 application reveals other observers in the Oat Mountain Quadrangle area have reported seven (7) Sensitive Plant Communities/Habitats. These Sensitive Plant Communities/Habitats include:

- California Walnut Woodland;
- Southern Coast Live Oak Riparian Forest;
- Southern Cottonwood Willow Riparian Forest;
- Southern Mixed Riparian Forest;
- Southern Sycamore Alder Riparian Woodland;
- Southern Willow Scrub; and,
- Valley Oak Woodland.

These communities were not observed within the survey area. No CDFW rare or sensitive plant communities occur within the survey area. The observed plant communities within the survey area are as follows:

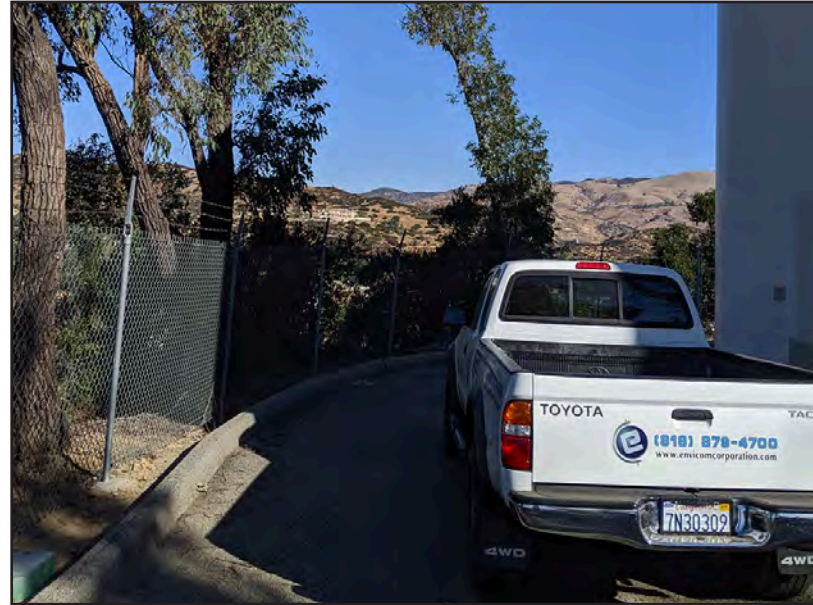
#### Woodlands

##### *Coast Live Oak Woodland*

In the western portion of the proposed staging area, several coast live oak trees (*Quercus agrifolia*) exist. Much of the understory of these trees is occupied by rocky outcrops, though in other areas the understory is quite disturbed. The access road passes right next to one, while the understory of others is comprised largely of non-native grasses and forbs, including tocalote (*Centaurea melitensis*) and rattail fescue (*Festuca myuros*). While coast live oak trees and woodlands are not considered sensitive by the CDFW, local ordinances commonly protect oak trees from removal or from encroachment into their protected zones.



**Photo 1A** – View of the south-facing side of the water tank to be replaced (left) and trees surrounding the paved area (right).



**Photo 1B** – View of the west-facing side of the tank to be removed (right) and trees surrounding the paved area (left). Most of the trees surrounding the paved area are non-native Eucalyptus trees, though there are several (non-ordinance) coast live oak trees.



**Photo 1C** – View of the coastal sage scrub community located in the northern portion of the proposed staging area. Disturbed road-side plants are visible in the foreground. This community is not considered sensitive.



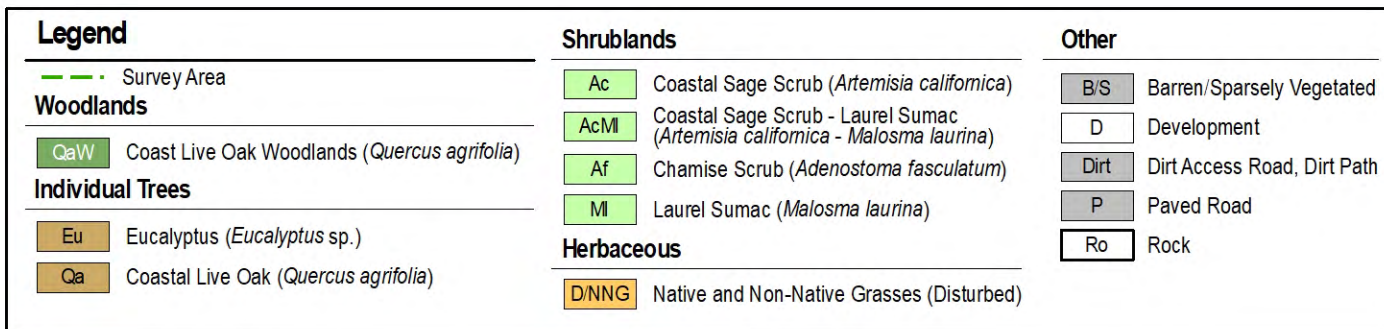
**Photo 1D** – A view of much of the small coast live oak woodland present in the western portion of the proposed staging area. The oak trees located here are of ordinance size and are protected.





Source: Google Earth Pro, 2018.

Revision date: Oct. 21, 2019.



## Scrub / Shrubland

### *California Sagebrush Scrub*

California sagebrush scrub dominates the portion of the proposed staging area north of the access road. California sagebrush (*Artemisia californica*) is the dominant shrub in this association. Other natives observed within this community include chamise (*Adenostoma fasciculatum*), and laurel sumac (*Malosma laurina*). The herbaceous layer within the community was dominated by hoary mustard (*Hirschfeldia incana*), tocalote, non-native wild oats (*Avena* sp.), and non-native bromes (*Bromus* spp.) This community is not considered sensitive by CDFW.

### *Laurel Sumac Scrub*

This community is dominated by laurel sumac, and occurs within the Survey Area in the small portion of the buffer that extends west of the existing water towers and in small areas in the buffer around the proposed staging area. The shrub layer is dominated by laurel sumac, with other natives including chamise and California sagebrush. The understory is dominated by non-native bromes, with some presence of hoary mustard. The overall level of disturbance in this community is less than that of the California sagebrush community described above. This community is not considered sensitive by CDFW.

### *Chamise Scrub*

This community has very limited presence within the Survey Area, and exists downslope of the small oak woodland that occupies the western edge of the proposed staging area. Chamise is the dominant shrub in this community, and exists surrounded by coast live oak trees and rocky outcroppings. Other natives within this community include laurel sumac, though the understory is dominated by non-native tocalote and rattail fescue. This community is not considered sensitive by CDFW.

### *California Sagebrush – Laurel Sumac Scrub*

This community occurs in the portion staging area south of the access road. Native shrubs are well represented in this community, with California sagebrush and laurel sumac being co-dominant. Other natives observed in this community include chamise, black sage (*Salvia mellifera*), and deerweed (*Acmispon glaber*). Non-natives are common in the understory here as they are throughout the Survey Area, including rattail fescue, bromes, and other non-native annual grasses. This community is not considered sensitive by CDFW.

## Herbaceous

### *Non-Native Grasses and Forbs Mapping Unit*

Portions of the survey area include disturbed non-native grassland habitat. Dominant non-native annual grasses in these areas include slender wild oats, red brome, and rigput grass. This mapping unit is used for convenience and does not correspond with any CDFW vegetation community. Within the survey area, these areas are those that appear to be managed and/or fuel modified, and include areas adjacent to the access road and the paved and fenced off area of the water tank facility, particularly to the south of the existing tanks.

### Other Land Cover

#### *Developed / Barren or Sparsely Vegetated Areas*

Parts of the survey area are best identified as barren, sparsely vegetated, or developed. These areas include the dirt access road and a dirt footpath found within the proposed staging area, a section adjacent to the road in this area that appears to have been scraped clean, and areas that are currently developed as part of the associated infrastructure of the existing water tank facility.

### **Plant Species Observed**

A total of 36 vascular plant taxa were identified during the survey, including 31 dicots and five (5) monocots. Twelve of the plants observed were non-native and 24 were native. A complete list of the vascular plant species observed in the survey area is provided in Attachment 1.

### **Potential for Special-Status Plant Species**

While no special-status plant species have potential to occur within the proposed project footprint surrounding the current water storage facility due to its highly modified and disturbed condition, several special-status plant species have a low potential to occur within the survey area, particularly in the proposed staging area. An evaluation of the potential for occurrence at the site of special-status plant species known to occur in the region was undertaken through a search of the CNPS Online Inventory of Rare and Endangered Plants, 8th ed. (CNPS 2018) and the California Department of Fish and Wildlife's Natural Diversity Data Base (CNDDDB) Rarefind 5 application (CDFW 2018) for sensitive “elements” reported within the Oat Mountain quadrangle and eight (8) adjacent quadrangles that surround it. The CNDDDB/CNPS derived lists are provided in **Attachment 3**. Based upon a review of the resources and databases listed above, 50 special-status vascular plant species have been documented within the nine USGS quadrangles. The analysis of the potential for occurrence of special-status plants is presented in **Attachment 4**, including growth form, blooming period, protection status, primary habitat associations, and an evaluation of their potential for occurrence at the site.

The status codes for special-status plants are described in **Table 1, Status Codes for Special-Status Plants**. Due to a variety of factors including small size, drought conditions, and/or annual or bulb growth form, the following six (6) vascular plant species have low potential to occur in the project site:

- Catalina mariposa lily (*Calochortus catalinae*) [CRPR 4.2]
- Chaparral ragwort (*Senecio aphanactis*) [CRPR 2B.2]
- Peirson's morning- glory (*Calystegia peirsonii*) [CRPR 4.2]
- Plummer's mariposa lily (*Calochortus plummerae*) [CRPR 4.2]
- Late-flowered mariposa lily (*Calochortus fimbriatus*) [CRPR 1B.3]
- Robinson's pepper- grass (*Lepidium virginicum* var. *robinsonii*) [CRPR 4.3]

**Table 1**  
**Status Codes for Special-Status Plants**

<b>FEDERALLY PROTECTED SPECIES</b>	
FE (Federal Endangered)	A species that is in danger of extinction throughout all or a significant portion of its range.
FT (Federal Threatened)	A species that is likely to become Endangered in the foreseeable future.
FC (Federal Candidate)	A species for which USFWS has sufficient information on its biological status and threats to propose it as Endangered or Threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.
<b>STATE PROTECTED SPECIES</b>	
CE (California Endangered)	A native species or subspecies which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
CT (California Threatened)	A native species or subspecies that, although not presently threatened with extinction, is likely to become an Endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as "Rare" on or before January 1, 1985, is a "Threatened species."
CR (California Rare)	A species, subspecies, or variety of plant is rare under the Native Plant Protection Act when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become Endangered if its present environment worsens. Animals are no longer listed as Rare; all animals listed as Rare before 1985 have been listed as threatened.
<b>CALIFORNIA RARE PLANT RANK (CRPR) (formerly CNPS Lists)</b>	
CRPR 1A	Plants presumed extirpated in California and either rare or extinct elsewhere.
CRPR 1B	Plants rare, threatened, or endangered in California and elsewhere.
CRPR 2A	Plants presumed extirpated in California, but more common elsewhere.
CRPR 2B	Plants rare, threatened, or endangered in California, but more common elsewhere.
CRPR 3	A review list for plants for which there is inadequate information to assign them to one of the other lists or to reject them.
CRPR 4	A watch list for plants that are of limited distribution in California.
<b>CALIFORNIA NATIVE PLANT SOCIETY (CNPS) THREAT RANK</b>	
The CNPS Threat Rank is an extension added onto the California Rare Plant Rank and designates the level of endangerment, as follows:	
<ul style="list-style-type: none"> <li>• 0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat).</li> <li>• 0.2-Fairly threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat).</li> <li>• 0.3-Not very threatened in California (&lt;20% of occurrences threatened / low degree and immediacy of threat or no current threats known).</li> </ul>	
<b>LOCALLY IMPORTANT SPECIES</b>	
LA County	Los Angeles County Locally Sensitive Plant Species.

### **Wildlife Observed**

No special-status wildlife species were observed during the survey. Several wildlife species associated with the foothill and grassland habitats were observed utilizing the areas for foraging. Casual observations of wildlife have been recorded based on sight or sign, including tracks, scat or vocal recognition. Wildlife species observed during the survey of the site were species common or relatively common to the region. In general, species observed constitute a sample of the non-special-status wildlife species that can be expected to utilize habitats at the site for cover, foraging, and reproduction. Bird species observed consisted primarily of year-round and summer residents, and potential migrants. Wildlife species observed during survey of the site are indicated in Attachment 2.

### **Potential for Special-Status Wildlife Species**

For the purposes of this assessment, special-status wildlife species are those species that are listed, proposed for listing, or that meet the criteria for listing as endangered, threatened, or rare under the FESA or CESA; and those that are listed on the CDFW Special Animals list with a designation of SSC (California Species of Special Concern) or CFP (California Fully Protected). Special-status wildlife species also include species considered to be Locally Sensitive by the County of Los Angeles. The status codes for special-status wildlife are described in **Table 2, Status Codes for Special-Status Wildlife**. CEQA Guidelines, Section 15125(a), also directs that special emphasis should be placed on resources that are rare or unique to the region.

Most of the special-status wildlife species that may potentially occur within the Project footprint are capable of escaping harm during Project construction, or fuel modification, while others are potentially vulnerable to direct impacts, including injury and mortality. The analysis of the potential for occurrence of special-status wildlife is presented in Attachment 4.

In this case, the special-status species that could be directly impacted include potentially occurring land dwelling animals, including the coastal whiptail, California glossy snake, San Diego mountain kingsnake, coast patch-nosed snake, and coast horned lizard. Two (2) bird species have a moderate or high potential to occur while foraging within the sagebrush, and grassland habitats within the study area, including southern California rufous-crowned sparrow, and white-tailed kite, and therefore could occur temporarily at the project site. The rufous-crowned sparrow is included on CDFW's Watchlist and is fairly common throughout its range. The white-tailed kite is a CDFW fully protected species that is uncommon but is known to forage over grassland habitat consistent with areas downslope of the study area. However, the proximity to existing development likely precludes the white-tailed kite from occurring. These species and several species of special-status bats, all Species of Special Concern, may forage over the project site with low probability but would not roost in the area. All of these species would be capable of escaping harm during grading or other project activities, if present.

**Table 2**  
**Status Codes for Special-Status Wildlife**

<b>FEDERALLY PROTECTED SPECIES</b>	
FE (Federal Endangered)	A species that is in danger of extinction throughout all or a significant portion of its range.
FT (Federal Threatened)	A species that is likely to become endangered in the foreseeable future.
FC (Federal Candidate)	A species for which USFWS has sufficient information on its biological status and threats to propose it as endangered or threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.
FSC (Federal Species of Concern)	A species under consideration for listing, for which there is insufficient information to support listing at this time. These species may or may not be listed in the future, and many of these species were formerly recognized as “Category-2 Candidate” species.
<b>STATE PROTECTED SPECIES</b>	
CE (California Endangered)	A native species or subspecies which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
CT (California Threatened)	A native species or subspecies that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as “rare” on or before January 1, 1985, is a “threatened species.”
SSC (California Species of Special Concern)	Animals that are not listed under the California Endangered Species Act, but which nonetheless 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist.
CFP (California Fully Protected)	This designation originated from the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians, reptiles, and birds. Most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. California Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.
SA (Special Animal)	“SA” is used herein if the animal is included on the CDFW Special Animals list but does not fall under any of the categories listed above. In general, special protection of these species is not mandatory under CEQA, although CDFW considers these species to be among those of greatest conversation need.
<b>LOCALLY PROTECTED SPECIES</b>	
LA County	Los Angeles County Sensitive Bird Species.

Some of these species are terrestrial and slow moving and could be harmed by the project, if present. Others would only forage aerially over the site, or are otherwise capable of escaping from

harm. The potential for occurrence of many of these species is primarily due to the presence of suitable habitats adjacent to or in the vicinity of the site, rather than the quality or suitability of the habitat at the project site itself.

The habitats within the impact area are not of particular importance to the survival or life cycle of any of the above-mentioned special-status species, such that the temporary loss of the habitat would have a significantly adverse effect on a population of the species. For those that could be harmed by the project, which is unlikely, the small size of the impacted area means that only a very small number of individuals would potentially be affected. With only a very small number of individuals potentially affected, a population of the species would not be significantly reduced. In addition, the species that could potentially be harmed by the project are not listed under the Federal or State Endangered Species Acts. No significant indirect impacts to special-status wildlife are expected.

The project impacts to special-status species would be less than significant, due to their low probability of occurrence and/or their capability of escaping from harm, the very small number of individuals that could potentially be affected, and because the habitats at the site are not of particular importance to their survival or life cycle. As the project would not result in significant project-level impacts to special-status wildlife species, cumulative impacts to special-status wildlife are less than significant.

In addition, the survey area and surrounding area does not contain federally designated critical habitat for listed wildlife species. The nearest USFWS designated Critical Habitat is located around the west, north, and east of the survey area and surrounding developed residential areas. The habitat was designated for the Federal-listed Threatened California gnatcatcher. Similar habitat is limited within the survey area and of lower quality.

### **Avoidance of Potential Impacts to Nesting Birds**

Ground and vegetation disturbing activities, if conducted during the nesting bird season (February 1 to August 31), would have the potential to result in removal or disturbance to trees and shrubs that could contain active bird nests. In addition, these activities would also affect herbaceous vegetation that could support and conceal ground-nesting species. Project activities that result in the loss of bird nests, eggs, and young, would be in violation of one or more of California Fish and Game Code sections 3503 (any bird nest), 3503.5 (birds-of-prey), or 3511 (Fully Protected birds). In addition, removal or destruction of one or more active nests of any other birds listed by the federal Migratory Bird Treaty Act of 1918 (MBTA), whether nest damage was due to vegetation removal or to other construction activities, would be considered a violation of the MBTA and California Fish and Game Code Section 3511. The loss of protected bird nests, eggs, or young due to Project activities would be a significant impact. Implementation of the following avoidance measures would prevent potentially significant impacts to nesting birds:

### **Nesting Bird Avoidance Measures**

If vegetation clearing (including tree pruning and removal) or other Project construction is to be initiated during the bird-breeding season (February 1 through August 31), two (2) preconstruction/grading surveys shall be conducted by a qualified ornithologist (a person with a biology degree and/or established skills in bird recognition). Surveys shall begin within 14 days and no more than three (3) days prior to disturbance activities. If bird species are observed nesting within or adjacent to construction/grading areas, all construction or grading activities will temporarily be postponed or halted at the discretion of the biologist until the nest is vacated and the juveniles have fledged.

At the discretion of the biologist, an exclusion zone shall be established around any active nests of any avian species found in the Survey Area until a qualified biologist has determined that all young have fledged. Suggested buffer zone distances differ depending on species, location, and placement of nest. Construction personnel shall be instructed on the sensitivity of the area. The applicant shall record the results of the recommended protective measures described above to document compliance with applicable State and federal laws pertaining to the protection of native birds.

### **Avoidance of Potential Impacts to Protected Oak Trees**

Many counties and cities in the region protect oak trees, typically dependent upon their size. The County of Los Angeles defines protected trees as all oak (*Quercus* sp.) trees greater than 8-inches in diameter, or a combination of any two (2) trunks measuring a total of 12-inches or more in diameter (measured 4.5 feet above mean natural grade).

While the coast live oak trees that occur within the proposed development footprint are not of ordinance size, the oak trees that occur within the proposed staging area are of sufficient size to qualify for protected status. Encroachment into the Protected Zone of any protected oak tree would require an Oak Tree Permit from the County of Los Angeles. In order to prevent impacts to protected oak trees within the proposed staging area, and to avoid the need for an Oak Tree Permit, the Protected Zone of the trees in the proposed staging area would need to be fenced off.

The Protected Zone is defined as the area within the dripline (canopy) and extending a minimum of five feet outside the dripline or 15 feet from the trunk of a tree; whichever is greater (Los Angeles County Oak Tree Ordinance Section 22.56.2060, subsection C).

The following Tree Protection Measures would prevent potential impacts to coast live oak trees of ordinance size located within the proposed staging area:



January 16, 2020

Letter to Mr. John Zhao

Biological Resources Letter Report – LVMWD Twin Lakes Water Tank Project (*Envicom Project No. 49-058-101*)

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### **Oak Tree Protection Measures**

- 1) The installation of chain link fencing not less than four feet in height around the protected zone of oak trees within the proposed staging area. Said fencing shall remain in place throughout the entire period of development. The protected zone in the case of the specific trees within the proposed staging area is 5 feet from the extent of the tree canopy in all directions.
- 2) No construction materials are to be stored or discarded within the Protection Zone of any oak. Rinse water, concrete residue, liquid contaminants (paint, thinners, gasoline, oils, etc.) of any type shall not be deposited in any form at the base of an oak.
- 3) No vehicles shall be parked within the Protection Zone of an oak.

### **SUMMARY OF BIOLOGICAL RESOURCES**

The plant communities within the project limits are not sensitive and project impacts to plant communities would be less than significant. The majority of the area impacted consists of highly disturbed terrain dominated by common chaparral and coastal sage scrub communities, non-native grassland, and barren or sparsely vegetated areas. In addition, wildlife that may be impacted should be able to avoid disturbances. So long as the Protected Zone of the oak trees within the proposed staging area are protected by adhering to the above Oak Tree Protection Measures, there would be no impact to protected oak trees.

Sincerely,



David West  
Biologist/Restoration Ecologist

### **Attachments:**

- Attachment A: References
- Attachment 1: Plant Species Observed, October 8, 2019
- Attachment 2: Wildlife Observed, October 8, 2019
- Attachment 3: CNDDDB/CNPS Literature Search Results
- Attachment 4: Special-Status Plant and Wildlife Species Potential For Occurrence

**ATTACHMENT A**  
**References**

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**ATTACHMENT 1**

**Plant Species Observed, October 8, 2019**

**Attachment 1**  
**Plant Species Observed, October 8, 2019**

GROUP Family	Common Name
<i>Scientific Name</i>	
<b>FLOWERING PLANTS-DICOTS</b>	
Anacardiaceae (Sumac or Cashew Family)	
<i>Malosma laurina</i>	laurel sumac
Apiaceae (Carrot Family)	
<i>Torilis arvensis</i>	field hedge parsley
Apocynaceae (Dogbane Family)	
<i>Asclepias fascicularis</i>	narrow leaf milkweed
Asteraceae (Sunflower family)	
<i>Artemisia californica</i>	California sagebrush
<i>Ambrosia acanthicarpa</i>	annual bursage
* <i>Centaurea melitensis</i>	tocalote
* <i>Cirsium vulgare</i>	bull thistle
<i>Encelia californica</i>	California brittlebush
<i>Erigeron canadensis</i>	horseweed
<i>Hazardia squarrosa</i>	Saw-toothed goldenbush
* <i>Lactuca serriola</i>	prickly lettuce
<i>Malacothrix saxatilis</i>	cliff aster
<i>Pseudognaphalium californica</i>	ladies' tobacco
Boraginaceae (Borage or Waterleaf Family)	
<i>Phacelia cicutaria</i>	caterpillar phacelia
Brassicaceae (Mustard Family)	
* <i>Brassica nigra</i>	black mustard
* <i>Hirschfeldia incana</i>	hoary mustard
Cactaceae (Cactus Family)	
* <i>Opuntia ficus-indica</i>	mission cactus
Euphorbiaceae (Spurge Family)	
<i>Croton setiger</i>	turkey-mullein
Fabaceae (Legume Family)	
<i>Acmispon glaber</i>	deerweed
<i>Lupinus succulentus</i>	arroyo lupine
* <i>Melilotus indicus</i>	yellow sweetclover
Fagaceae (Oak Family)	
<i>Quercus agrifolia</i>	coast live oak
Lamiaceae (Mint Family)	
* <i>Marrubium vulgare</i>	white horehound
<i>Salvia apiana</i>	white sage
<i>Salvia mellifera</i>	black sage
Myrtaceae (Myrtle Family)	
* <i>Eucalyptus</i> sp.	gum trees
Polygonaceae (Buckwheat Family)	
<i>Eriogonum elongatum</i>	long-stemmed buckwheat
<i>Eriogonum fasciculatum</i>	California buckwheat

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<b>GROUP</b> <b>Family</b> <b>Scientific Name</b>	<b>Common Name</b>
Rhamnaceae (Buckthorn Family)	
<i>Rhamnus ilicifolia</i>	hollyleaf redberry
Rosaceae (Rose Family)	
<i>Adenostoma fasciculatum</i>	chamise
Salicaceae ( <i>Willow Family</i> )	
<i>Populus fremontii</i>	Fremont cottonwood
<b>FLOWERING PLANTS-MONOCOTS</b>	
Agavaceae (Century Plant Family)	
<i>Chlorogalum pomeridianum</i>	wavyleaf soap plant
<i>Hesperoyucca whipplei</i>	chaparral yucca
Poaceae (Grass Family)	
* <i>Avena</i> sp.	wild oat
* <i>Bromus madritensis</i>	foxtail brome
* <i>Festuca myuros</i>	rattail fescue

**ATTACHMENT 2**

**Wildlife Observed, October 8, 2019**



**Attachment 2**  
**Wildlife Observed, October 8, 2019**

Common Name	<i>Scientific Name</i>
<b>REPTILES</b>	
Great Basin (western) fence lizard	<i>Sceloporus occidentalis longipes</i>
<b>BIRDS</b>	
American crow	<i>Corvus brachyrhynchos</i>
California quail	<i>Callipepla californica</i>
california scrub-jay	<i>Aphelocoma californica</i>
house finch	<i>Haemorhous mexicanus</i>
red-tailed hawk	<i>Buteo jamaicensis</i>
song sparrow	<i>Melospiza melodia</i>
turkey vulture	<i>Cathartes aura</i> <sup>SEP</sup>
white-crowned sparrow	<i>Zonotrichia leucophrys</i>
wrentit	<i>Chamaea fasciata</i>
<b>MAMMALS</b>	
California ground squirrel	<i>Spermophilus beecheyi</i>
coyote	<i>Canis latrans</i>
desert cottontail	<i>Sylvilagus audubonii</i>
eastern fox squirrel	<i>Sciurus niger</i>
domestic horse	<i>Equus ferus caballus</i>
woodrat species	<i>Neotoma sp.</i>

**ATTACHMENT 3**  
**CNDDDB/CNPS Literature Search Results**



# Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (Val Verde (3411846) OR Newhall (3411845) OR Mint Canyon (3411844) OR Santa Susana (3411836) OR Oat Mountain (3411835) OR San Fernando (3411834) OR Calabasas (3411826) OR Canoga Park (3411825) OR Van Nuys (3411824))

Table with 7 columns: Species, Element Code, Federal Status, State Status, Global Rank, State Rank, Rare Plant Rank/CDFW SSC or FP. Rows include species like Accipiter cooperii, Agelaius tricolor, Aimophila ruficeps canescens, Ammodramus savannarum, Anaxyrus californicus, Anniella sp., Antrozous pallidus, Aquila chrysaetos, Arizona elegans occidentalis, Artemisiospiza belli belli, Aspidoscelis tigris stejnegeri, Astragalus brauntonii, Athene cunicularia, Berberis nevinii, Bombus crotchii, Branchinecta lynchi, Buteo swainsoni, and California Walnut Woodland.



**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
<b><i>Calochortus clavatus var. gracilis</i></b> slender mariposa-lily	PMLIL0D096	None	None	G4T2T3	S2S3	1B.2
<b><i>Calochortus fimbriatus</i></b> late-flowered mariposa-lily	PMLIL0D1J2	None	None	G3	S3	1B.3
<b><i>Calochortus palmeri var. palmeri</i></b> Palmer's mariposa-lily	PMLIL0D122	None	None	G3T2	S2	1B.2
<b><i>Calochortus plummerae</i></b> Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
<b><i>Calystegia peirsonii</i></b> Peirson's morning-glory	PDCON040A0	None	None	G4	S4	4.2
<b><i>Catostomus santaanae</i></b> Santa Ana sucker	AFCJC02190	Threatened	None	G1	S1	
<b><i>Chorizanthe parryi var. fernandina</i></b> San Fernando Valley spineflower	PDPGN040J1	Proposed Threatened	Endangered	G2T1	S1	1B.1
<b><i>Chorizanthe parryi var. parryi</i></b> Parry's spineflower	PDPGN040J2	None	None	G3T2	S2	1B.1
<b><i>Cismontane Alkali Marsh</i></b> Cismontane Alkali Marsh	CTT52310CA	None	None	G1	S1.1	
<b><i>Coccyzus americanus occidentalis</i></b> western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<b><i>Corynorhinus townsendii</i></b> Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
<b><i>Danaus plexippus pop. 1</i></b> monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
<b><i>Deinandra minthornii</i></b> Santa Susana tarplant	PDAST4R0J0	None	Rare	G2	S2	1B.2
<b><i>Dodecahema leptoceras</i></b> slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
<b><i>Dudleya blochmaniae ssp. blochmaniae</i></b> Blochman's dudleya	PDCRA04051	None	None	G3T2	S2	1B.1
<b><i>Dudleya multicaulis</i></b> many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
<b><i>Elanus leucurus</i></b> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<b><i>Emys marmorata</i></b> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<b><i>Eremophila alpestris actia</i></b> California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
<b><i>Euderma maculatum</i></b> spotted bat	AMACC07010	None	None	G4	S3	SSC
<b><i>Eumops perotis californicus</i></b> western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC



**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
<b><i>Euphydryas editha quino</i></b> quino checkerspot butterfly	IILEPK405L	Endangered	None	G5T1T2	S1S2	
<b><i>Gasterosteus aculeatus williamsoni</i></b> unarmored threespine stickleback	AFCPA03011	Endangered	Endangered	G5T1	S1	FP
<b><i>Gila orcuttii</i></b> arroyo chub	AFCJB13120	None	None	G2	S2	SSC
<b><i>Harpagonella palmeri</i></b> Palmer's grapplinghook	PDBOR0H010	None	None	G4	S3	4.2
<b><i>Helianthus inexpectatus</i></b> Newhall sunflower	PDAST4N250	None	None	G1	S1	1B.1
<b><i>Horkelia cuneata var. puberula</i></b> mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
<b><i>Icteria virens</i></b> yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
<b><i>Lanius ludovicianus</i></b> loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
<b><i>Lasionycteris noctivagans</i></b> silver-haired bat	AMACC02010	None	None	G5	S3S4	
<b><i>Lasiurus cinereus</i></b> hoary bat	AMACC05030	None	None	G5	S4	
<b><i>Lasthenia glabrata ssp. coulteri</i></b> Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
<b><i>Lepidium virginicum var. robinsonii</i></b> Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
<b><i>Lepus californicus bennettii</i></b> San Diego black-tailed jackrabbit	AMAEB03051	None	None	G5T3T4	S3S4	SSC
<b><i>Lupinus paynei</i></b> Payne's bush lupine	PDFAB2B580	None	None	G1Q	S1	1B.1
<b><i>Macrotus californicus</i></b> California leaf-nosed bat	AMACB01010	None	None	G4	S3	SSC
<b>Mainland Cherry Forest</b> Mainland Cherry Forest	CTT81820CA	None	None	G1	S1.1	
<b><i>Malacothamnus davidsonii</i></b> Davidson's bush-mallow	PDMAL0Q040	None	None	G2	S2	1B.2
<b><i>Monardella hypoleuca ssp. hypoleuca</i></b> white-veined monardella	PDLAM180A5	None	None	G4T3	S3	1B.3
<b><i>Navarretia fossalis</i></b> spreading navarretia	PDPLM0C080	Threatened	None	G2	S2	1B.1
<b><i>Navarretia ojaiensis</i></b> Ojai navarretia	PDPLM0C130	None	None	G2	S2	1B.1
<b><i>Navarretia setiloba</i></b> Piute Mountains navarretia	PDPLM0C0S0	None	None	G2	S2	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
<b><i>Neotoma lepida intermedia</i></b> San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
<b><i>Nolina cismontana</i></b> chaparral nolina	PMAGA080E0	None	None	G3	S3	1B.2
<b><i>Onychomys torridus ramona</i></b> southern grasshopper mouse	AMAFF06022	None	None	G5T3	S3	SSC
<b><i>Opuntia basilaris var. brachyclada</i></b> short-joint beavertail	PDCAC0D053	None	None	G5T3	S3	1B.2
<b><i>Orcuttia californica</i></b> California Orcutt grass	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
<b><i>Perognathus longimembris brevinasus</i></b> Los Angeles pocket mouse	AMAFD01041	None	None	G5T1T2	S1S2	SSC
<b><i>Phrynosoma blainvillii</i></b> coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
<b><i>Poliophtila californica californica</i></b> coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
<b><i>Pseudognaphalium leucocephalum</i></b> white rabbit-tobacco	PDAST440C0	None	None	G4	S2	2B.2
<b><i>Rana draytonii</i></b> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<b><i>Rana muscosa</i></b> southern mountain yellow-legged frog	AAABH01330	Endangered	Endangered	G1	S1	WL
<b><i>Rhinichthys osculus ssp. 3</i></b> Santa Ana speckled dace	AFCJB3705K	None	None	G5T1	S1	SSC
<b><i>Riparia riparia</i></b> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<b><i>Riversidian Alluvial Fan Sage Scrub</i></b> Riversidian Alluvial Fan Sage Scrub	CTT32720CA	None	None	G1	S1.1	
<b><i>Senecio aphanactis</i></b> chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
<b><i>Setophaga petechia</i></b> yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC
<b><i>Socalchemmis gertschi</i></b> Gertsch's socalchemmis spider	ILARAU7010	None	None	G1	S1	
<b><i>Southern California Threespine Stickleback Stream</i></b> Southern California Threespine Stickleback Stream	CARE2320CA	None	None	GNR	SNR	
<b><i>Southern Coast Live Oak Riparian Forest</i></b> Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
<b><i>Southern Cottonwood Willow Riparian Forest</i></b> Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
<b><i>Southern Mixed Riparian Forest</i></b> Southern Mixed Riparian Forest	CTT61340CA	None	None	G2	S2.1	



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
<b>Southern Riparian Scrub</b> Southern Riparian Scrub	CTT63300CA	None	None	G3	S3.2	
<b>Southern Sycamore Alder Riparian Woodland</b> Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
<b>Southern Willow Scrub</b> Southern Willow Scrub	CTT63320CA	None	None	G3	S2.1	
<b>Spea hammondi</b> western spadefoot	AAABF02020	None	None	G3	S3	SSC
<b>Symphotrichum greatae</b> Greata's aster	PDASTE80U0	None	None	G2	S2	1B.3
<b>Taricha torosa</b> Coast Range newt	AAAAF02032	None	None	G4	S4	SSC
<b>Taxidea taxus</b> American badger	AMAJF04010	None	None	G5	S3	SSC
<b>Thamnophis hammondi</b> two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
<b>Valley Needlegrass Grassland</b> Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
<b>Valley Oak Woodland</b> Valley Oak Woodland	CTT71130CA	None	None	G3	S2.1	
<b>Vireo bellii pusillus</b> least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

Record Count: 92

\*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

## Plant List

48 matches found. [Click on scientific name for details](#)

### Search Criteria

Found in Quads 3411846, 3411845, 3411844, 3411836, 3411835, 3411834, 3411826 3411825 and 3411824;

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Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
<a href="#">Acanthoscyphus parishii var. parishii</a>	Parish's oxytheca	Polygonaceae	annual herb	Jun-Sep	4.2	S3S4	G4? T3T4
<a href="#">Astragalus brauntonii</a>	Braunton's milk-vetch	Fabaceae	perennial herb	Jan-Aug	1B.1	S2	G2
<a href="#">Berberis nevinii</a>	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar-Jun	1B.1	S1	G1
<a href="#">Calochortus catalinae</a>	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	4.2	S3S4	G3G4
<a href="#">Calochortus clavatus var. clavatus</a>	club-haired mariposa lily	Liliaceae	perennial bulbiferous herb	(Mar)May-Jun	4.3	S3	G4T3
<a href="#">Calochortus clavatus var. gracilis</a>	slender mariposa lily	Liliaceae	perennial bulbiferous herb	Mar-Jun(Nov)	1B.2	S2S3	G4T2T3
<a href="#">Calochortus fimbriatus</a>	late-flowered mariposa lily	Liliaceae	perennial bulbiferous herb	Jun-Aug	1B.3	S3	G3
<a href="#">Calochortus palmeri var. palmeri</a>	Palmer's mariposa lily	Liliaceae	perennial bulbiferous herb	Apr-Jul	1B.2	S2	G3T2
<a href="#">Calochortus plummerae</a>	Plummer's mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	4.2	S4	G4
<a href="#">Calystegia peirsonii</a>	Peirson's morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	4.2	S4	G4
<a href="#">Canbya candida</a>	white pygmy-poppy	Papaveraceae	annual herb	Mar-Jun	4.2	S3S4	G3G4
<a href="#">Castilleja gleasoni</a>	Mt. Gleason paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	May-Jun(Sep)	1B.2	S2	G2
<a href="#">Centromadia parryi ssp. australis</a>	southern tarplant	Asteraceae	annual herb	May-Nov	1B.1	S2	G3T2
<a href="#">Cercocarpus betuloides var. blancheae</a>	island mountain-mahogany	Rosaceae	perennial evergreen shrub	Feb-May	4.3	S4	G5T4
<a href="#">Chorizanthe parryi var. fernandina</a>	San Fernando Valley spineflower	Polygonaceae	annual herb	Apr-Jul	1B.1	S1	G2T1
<a href="#">Chorizanthe parryi var. parryi</a>	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S2	G3T2



<a href="#"><u>Clinopodium mimuloides</u></a>	monkey-flower savory	Lamiaceae	perennial herb	Jun-Oct	4.2	S3	G3
<a href="#"><u>Convolvulus simulans</u></a>	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
<a href="#"><u>Deinandra minthornii</u></a>	Santa Susana tarplant	Asteraceae	perennial deciduous shrub	Jul-Nov	1B.2	S2	G2
<a href="#"><u>Deinandra paniculata</u></a>	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov(Dec)	4.2	S4	G4
<a href="#"><u>Delphinium parryi ssp. purpureum</u></a>	Mt. Pinos larkspur	Ranunculaceae	perennial herb	May-Jun	4.3	S4	G4T4
<a href="#"><u>Dodecahema leptoceras</u></a>	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S1	G1
<a href="#"><u>Dudleya blochmaniae ssp. blochmaniae</u></a>	Blochman's dudleya	Crassulaceae	perennial herb	Apr-Jun	1B.1	S2	G3T2
<a href="#"><u>Dudleya cymosa ssp. agourensis</u></a>	Agoura Hills dudleya	Crassulaceae	perennial herb	May-Jun	1B.2	S1	G5T1
<a href="#"><u>Dudleya multicaulis</u></a>	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	1B.2	S2	G2
<a href="#"><u>Harpagonella palmeri</u></a>	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	4.2	S3	G4
<a href="#"><u>Helianthus inexpectatus</u></a>	Newhall sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	1B.1	S1	G1
<a href="#"><u>Hordeum intercedens</u></a>	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
<a href="#"><u>Horkelia cuneata var. puberula</u></a>	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	1B.1	S1	G4T1
<a href="#"><u>Hulsea vestita ssp. parryi</u></a>	Parry's sunflower	Asteraceae	perennial herb	Apr-Aug	4.3	S4	G5T4
<a href="#"><u>Juglans californica</u></a>	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	4.2	S4	G4
<a href="#"><u>Lasthenia glabrata ssp. coulteri</u></a>	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
<a href="#"><u>Lepidium virginicum var. robinsonii</u></a>	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	4.3	S3	G5T3
<a href="#"><u>Lilium humboldtii ssp. ocellatum</u></a>	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	4.2	S4?	G4T4?
<a href="#"><u>Lupinus paynei</u></a>	Payne's bush lupine	Fabaceae	perennial shrub	Mar-Apr(May-Jul)	1B.1	S1	G1Q
<a href="#"><u>Malacothamnus davidsonii</u></a>	Davidson's bush-mallow	Malvaceae	perennial deciduous shrub	Jun-Jan	1B.2	S2	G2
<a href="#"><u>Navarretia fossalis</u></a>	spreading navarretia	Polemoniaceae	annual herb	Apr-Jun	1B.1	S2	G2
<a href="#"><u>Navarretia ojaiensis</u></a>	Ojai navarretia	Polemoniaceae	annual herb	May-Jul	1B.1	S2	G2
<a href="#"><u>Navarretia setiloba</u></a>	Piute Mountains navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
<a href="#"><u>Nolina cismontana</u></a>	chaparral nolina	Ruscaceae	perennial evergreen shrub	(Mar)May-Jul	1B.2	S3	G3
<a href="#"><u>Opuntia basilaris var. brachyclada</u></a>	short-joint beavertail	Cactaceae	perennial stem succulent	Apr-Jun(Aug)	1B.2	S3	G5T3
<a href="#"><u>Orcuttia californica</u></a>	California Orcutt grass	Poaceae	annual herb	Apr-Aug	1B.1	S1	G1
<a href="#"><u>Phacelia hubbyi</u></a>	Hubby's phacelia	Hydrophyllaceae	annual herb	Apr-Jul	4.2	S4	G4
<a href="#"><u>Phacelia mohavensis</u></a>	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	4.3	S4	G4Q

<a href="#"><u>Pseudognaphalium leucocephalum</u></a>	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	2B.2	S2	G4
<a href="#"><u>Senecio aphanactis</u></a>	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
<a href="#"><u>Stylocline masonii</u></a>	Mason's neststraw	Asteraceae	annual herb	Mar-May	1B.1	S1	G1
<a href="#"><u>Symphotrichum greatae</u></a>	Greata's aster	Asteraceae	perennial rhizomatous herb	Jun-Oct	1B.3	S2	G2

### Suggested Citation

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#### Questions and Comments

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**ATTACHMENT 4**

**Special-Status Plant and Wildlife Species  
Potential For Occurrence**

**Attachment 4**  
**Special-Status Plant and Wildlife Species Potential For Occurrence**

<b>Common Name (Scientific Name)</b>	<b>Form</b>	<b>Blooming Period</b>	<b>Primary Habitat Associations</b>	<b>Status (Federal/State/ CNPS)</b>	<b>Potential to Occur</b> (observed, potentially present, presumed absent, none) (Project Site Elevation is 450m)
<b>PLANTS</b>					
<b>Federal or State-Listed Species</b>					
Agoura Hills dudleya ( <i>Dudleya cymosa</i> ssp. <i>agourensis</i> )	perennial herb	May – June	Rocky, volcanic breccia in chaparral and cismontane woodland at elevations between 200 to 500 meters.	FT/1B.2	<b>Absent.</b> Suitable habitats are absent.
Braunton's milkvetch ( <i>Astragalus brauntonii</i> )	perennial herb	January – August	Recent burns or disturbed areas, usually sandstone with carbonate layers in closed-cone coniferous forest, chaparral, coastal scrub, and valley and foothill grassland at elevations between 4 and 640 meters. A soil specialist in saline, somewhat alkaline soils high in calcium, manganese, with some potassium.	FE/1B.1	<b>Presumed absent.</b> Absence of live or dead plants confirmed by field surveys. Also, based on soil maps suitable calcareous soils are absent so there is no reasonable potential for this species to occur as a dormant seed bank.
California orcutt grass ( <i>Orcuttia californica</i> )	annual herb	April – August	Vernal pools at elevations between 15 and 660 meters.	FE/CE/1B.1	<b>Absent.</b> Suitable habitats are absent.
Nevin's barberry ( <i>Berberis nevinii</i> )	perennial evergreen shrub	(February) March – June	Sandy or gravelly, chaparral, cismontane woodland, coastal scrub, and riparian scrub at elevations between 70 - 825 meters.	FE/CE/1B.1	<b>Absent.</b> Outside of typical range for species, limited suitable habitat within Survey Area.
San Fernando Valley spineflower ( <i>Chorizanthe parryi</i> var. <i>fernandina</i> )	annual herb	April – July	Sandy soils in coastal scrub and valley and foothill grassland at elevations between 3 and 1035 meters.	FC/CE/1B.1	<b>Presumed absent.</b> Suitable habitats are absent.
Parry's Spineflower ( <i>Chorizanthe parryi</i> var. <i>parryi</i> )	annual herb	April – June	Sandy or rocky substrate in openings in cismontane woodland, chaparral, coastal scrub, valley and foothill grasslands between 275 and 1220 meters.	1B.1	<b>Presumed absent.</b> Outside of typical range for species, limited suitable habitat within Survey Area.

<b>Common Name (<i>Scientific Name</i>)</b>	<b>Form</b>	<b>Blooming Period</b>	<b>Primary Habitat Associations</b>	<b>Status (Federal/State/ CNPS)</b>	<b>Potential to Occur</b> (observed, potentially present, presumed absent, none) (Project Site Elevation is 450m)
Santa Susana tarplant ( <i>Deinandra minthornii</i> )	perennial deciduous shrub	July – November	Rocky sandstone habitats in chaparral and coastal scrub at elevations between 280 and 760 meters.	CR/1B.2	<b>Presumed absent.</b> Not observed during surveys, which were conducted at the appropriate time of year for detection. Historical sightings in area are from 1995 report and were confirmed absent.
Slender-horned spineflower ( <i>Dodecahema leptoceras</i> )	annual herb	April – June	Flood deposited terraces and washes in chaparral, cismontane woodland, and coastal scrub (alluvial fan sage scrub) at elevations between 200 and 760 meters.	FE/CE/1B.1	<b>Absent.</b> Suitable habitats are absent.
Spreading navarretia ( <i>Navarretia fossalis</i> )	annual herb	April – June	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools at elevations between 30 - 655 meters.	FT/1B.1	<b>Absent.</b> Suitable habitats are absent.
<b>Non-Listed Special-Status Species</b>					
Blochman's dudleya ( <i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i> )	perennial herb	April – June	Open, rocky slopes; often in shallow clays over serpentine or in rocky areas with little soil; coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grassland at elevations between 5 and 450 meters.	1B.1	<b>Absent.</b> Suitable habitats are absent.
Catalina mariposa lily ( <i>Calochortus catalinae</i> )	perennial bulbiferous herb	(February) March – June	Found in chaparral, cismontane woodland, coastal scrub, valley and foothill grassland at elevations between 15 - 700 meters.	4.2	<b>Potentially present.</b> Potentially present, but with low probability. The site is above the species' preferred elevation range.
Chaparral nolina ( <i>Nolina cismontana</i> )	perennial evergreen shrub	May – July	Sandstone or gabbro substrates in chaparral and coastal scrub at elevations between 140 and 1275 meters.	1B.2	<b>Presumed absent.</b> Perennial shrub confirmed absent by field surveys.

<b>Common Name (<i>Scientific Name</i>)</b>	<b>Form</b>	<b>Blooming Period</b>	<b>Primary Habitat Associations</b>	<b>Status (Federal/State/ CNPS)</b>	<b>Potential to Occur</b> (observed, potentially present, presumed absent, none) (Project Site Elevation is 450m)
Chaparral ragwort ( <i>Senecio aphanactis</i> )	annual herb	January – April	Chaparral, cismontane woodland, and coastal scrub habitats at elevations between 15 and 800 meters, sometimes on alkaline soils.	2B.2	<b>Potentially present.</b> Potentially present, but with low probability due to the disturbed nature of the majority of the Survey Area.
Club-haired mariposa lily ( <i>Calochortus clavatus</i> <i>var. clavatus</i> )	perennial bulbiferous herb	(March) May – June	Usually found in serpentinite, clay, rocky, and chaparral, cismontane woodland, coastal scrub, valley and foothill grassland at elevations between 75 - 1300 meters.	4.3	<b>Presumed absent.</b> Soil preference may limit species presence. While within the range for the species, no observations have been recorded within 6 miles of Survey Area.
Coulter's goldfields ( <i>Lasthenia glabrata</i> ssp. <i>coulteri</i> )	annual herb	February – June	Found in coastal salt marshes and swamps, playas, and vernal pools at elevations between 1 and 1220 meters.	1B.1	<b>Absent.</b> Suitable habitats are absent.
Davidson's bush-mallow ( <i>Malacothamnus davidsonii</i> )	perennial deciduous shrub	June – January	Chaparral, cismontane woodland, coastal scrub, riparian woodland at elevations between 185 – 1,140 meters.	1B.2	<b>Presumed absent.</b> Perennial shrub confirmed absent by field surveys.
Greata'a aster ( <i>Symphyotrichum greatae</i> )	perennial rhizomatous herb	June – October	Mesic habitats in broadleaf upland forests, chaparral, cismontane woodlands, lower montane coniferous forests, and riparian woodlands at elevations between 300 – 2,010 meters. Damp places in canyons on south slope of San Gabriel Mountains.	1B.3	<b>Presumed absent.</b> Suitable habitats are absent.
Hubby's phacelia ( <i>Phacelia hubbyi</i> )	annual herb	April – July	Gravelly, rocky, talus, chaparral, coastal scrub, valley and foothill grassland at elevations between 0 - 1000 meters.	4.2	<b>Presumed absent.</b> Suitable habitats are absent. No nearby observations recorded.
Island mountain-mahogany ( <i>Cercocarpus betuloides</i> <i>var. blancheae</i> )	perennial evergreen shrub	February – May	Closed-cone coniferous forest and chaparral at elevations between 30 - 600 meters.	4.3	<b>Presumed absent.</b> Perennial shrub confirmed absent by field surveys.

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Late-flowered mariposa lily ( <i>Calochortus fimbriatus</i> )	perennial bulbiferous herb	June – August	Found often in serpentinite, chaparral, cismontane woodland, riparian woodland at elevations of 275 - 1905 meters.	1B.3	<b>Potentially present.</b> Potentially present, but with low probability. Typical range for the species is to the west of the Survey Area.
Many-stemmed dudleya ( <i>Dudleya multicaulis</i> )	perennial herb	April – July	Chaparral, coastal scrub, and valley and foothill grassland at elevations between 15 and 790 meters, in heavy, often clayey soils or grassy slopes.	1B.2	<b>Presumed absent.</b> Not found in suitable habitat during field surveys. Survey Area is outside the known range of this species.
Mason's neststraw ( <i>Stylocline masonii</i> )	annual herb	March – May	Sandy. chenopod scrub, Pinyon and juniper woodland at elevations of 100 - 1200 meters.	1B.1	<b>Absent.</b> Suitable habitats are absent.
Mesa horkelia ( <i>Horkelia cuneata</i> var. <i>puberula</i> )	perennial herb	February - September	Sandy or gravelly substrates in maritime chaparral, cismontane woodland, and coastal scrub at elevations between 70 and 810 meters.	1B.1	<b>Presumed absent.</b> This species preferred habitat is not available within the Survey Area. Survey Area is outside the known range of this species.
Mojave phacelia ( <i>Phacelia mohavensis</i> )	annual herb	April – August	Gravelly, rocky, talus, chaparral, coastal scrub, valley and foothill grassland at elevations between 0 - 1000 meters.	4.3	<b>Presumed absent.</b> Not found in suitable habitat during field surveys. Also, based on Consortium of California Herbaria records, the site is outside the known range of this species.
Monkey-flower savory ( <i>Clinopodium mimuloides</i> )	perennial herb	June – October	Streambanks and mesic habitats in chaparral and North Coast coniferous forest at elevations of 305 - 1800 meters.	4.2	<b>Absent.</b> Suitable habitats are absent.
Mt. Gleason paintbrush ( <i>Castilleja gleasoni</i> )	perennial herb (hemiparasitic)	May – June (September)	Found in granitic areas, chaparral, lower montane coniferous forest, pinyon and juniper woodland at elevations of 1160 - 2170 meters.	1B.2	<b>Presumed absent.</b> Suitable habitats are absent.

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Mt. Pinos larkspur ( <i>Delphinium parryi</i> ssp. <i>Purpureum</i> )	perennial herb	May – June	Chaparral, Mojavean desert scrub, Pinyon and juniper woodland at elevations between 1000 - 2600 meters.	4.3	<b>Presumed absent.</b> Suitable habitats are absent. Survey Area is below elevation range for the species.
Newhall sunflower ( <i>Helianthus</i> <i>inexpectatus</i> )	perennial rhizomatous herb	August – October	Freshwater, seeps, marshes and swamps, and riparian woodland.	1B.1	<b>Absent.</b> Suitable habitats are absent.
Ocellated Humboldt lily ( <i>Lilium humboldtii</i> ssp. <i>Ocellatum</i> )	perennial bulbiferous herb	March – July (August)	Openings, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland at elevations between 30 - 1800 meters.	4.2	<b>Presumed absent. Limited</b> suitable habitats. Survey Area is outside of typical range for the species.
Ojai navarretia ( <i>Navarretia ojaiensis</i> )	annual herb	May – July	Valley and foothill grassland and openings in chaparral and coastal scrub at elevations between 275 and 620 meters.	1B.1	<b>Presumed absent.</b> Suitable habitats absent. Survey Area is outside of typical range for the species.
Palmer's grapplinghook ( <i>Harpagonella palmeri</i> )	annual herb	March – May	Clay soils in chaparral, coastal scrub, and valley and foothill grassland at elevations between 20 and 955 meters.	4.2	<b>Presumed absent.</b> Soil preference may limit species presence. Typical species range is to the north and southeast of the Survey Area, which has no nearby observations.
Paniculate tarplant ( <i>Deinandra paniculata</i> )	annual herb	(March) April – November	Usually vernal mesic, sometimes sandy, coastal scrub, valley and foothill grassland, vernal pools at elevations between 25 - 940 meters.	4.2	<b>Absent.</b> Suitable habitats are absent.
Parish's oxytheca ( <i>Acanthoscyphus</i> <i>parishii</i> var. <i>parishii</i> )	annual herb	June – September	Sandy or gravelly areas, chaparral, and lower montane coniferous forest at elevations between 1220 - 2600 meters.	4.2	<b>Presumed absent.</b> Suitable habitats are absent from Survey Area. Out of elevation range for species.



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Parry's sunflower ( <i>Hulsea vestita</i> ssp. <i>Parryi</i> )	perennial herb	April – August	Granitic or carbonate, rocky, openings and lower montane coniferous forest, Pinyon and juniper woodland and upper montane coniferous forest at elevations between 1,370 – 2,895 meters.	4.3	<b>Presumed absent.</b> Suitable habitats are absent from Survey Area. Out of elevation range for species.
Payne's bush lupine ( <i>Lupinus paynei</i> )	perennial shrub	March – April (May – July)	Sandy, coastal scrub, riparian scrub, valley and foothill grassland at elevations between 220 - 420 meters.	3.1	<b>Absent.</b> Suitable habitats are absent. Perennial species not observed during survey.
Peirson's morning- glory ( <i>Calystegia peirsonii</i> )	perennial rhizomatous herb	April – June	Found in chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland at elevations between 30 – 1,500 meters.	4.2	<b>Potentially present.</b> Potentially present, but with low probability. Typical range for the species begins eight miles to the north of the Survey area
Piute Mountains navarretia ( <i>Navarretia setiloba</i> )	annual herb	April – July	Clay or gravelly loam substrates in cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland at elevations between 285 and 2,100 meters.	1B.1	<b>Presumed absent.</b> This species preferred habitat is not available within the development footprint. The site is not in the vicinity of the nearest recorded occurrence.
Plummer's mariposa lily ( <i>Calochortus plummerae</i> )	perennial bulbiferous herb	May – July	Found in granitic, rocky areas, chaparral, cismontane woodland, coastal scrub, lower montane, coniferous forest, and valley and foothill grassland at elevations of 100 - 1700 meters.	4.2	<b>Potentially present.</b> Potentially present, but with low probability.
Robinson's pepper- grass ( <i>Lepidium virginicum var. robinsonii</i> )	annual herb	January – July	Chaparral and coastal scrub at elevations between 1 - 885 meters.	4.3	<b>Potentially present.</b> Potentially present, but with low probability. However, this species is not expected to occur in the development footprint.

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Round-leaved filaree ( <i>California macrophylla</i> )	annual herb	March – May	Cismontane woodland and valley and foothill grassland on clay soils at elevations between 15 and 1200 meters.	1B.1	<b>Presumed absent.</b> This species preferred habitat is not available within the development footprint. The site is not in the vicinity of the nearest recorded occurrence.
Short-joint beavertail ( <i>Opuntia basilaris</i> var. <i>brachyclada</i> )	perennial stem succulent	April – June (August)	Chaparral, Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland at elevations between 425 - 1800 meters.	1B.2	<b>Absent.</b> Suitable habitats are absent. Conspicuous perennial not observed during survey.
Slender mariposa-lily ( <i>Calochortus clavatus</i> var. <i>gracilis</i> )	perennial bulbiferous herb	March – June	Shaded foothill canyons in chaparral, coastal scrub, and valley and foothill grassland at elevations between 320 and 1000 meters.	1B.2	<b>Presumed absent.</b> This species preferred habitat is not available within the development footprint. The site is not in the vicinity of the nearest recorded occurrence.
Small-flowered morning-glory ( <i>Convolvulus simulans</i> )	annual herb	March – July	Found in clay, serpentinite seeps, chaparral (openings), coastal scrub, valley and foothill grassland at elevations between 30 - 740 meters.	4.2	<b>Presumed absent.</b> Suitable habitats are absent.
Southern California black walnut ( <i>Juglans californica</i> )	perennial deciduous tree	March – August	Alluvial, chaparral, cismontane woodland, coastal scrub, riparian woodland at elevations between 50 - 900 meters.	4.2	<b>Absent.</b> Suitable habitats are absent and the species would have been observed if present.
Southern tarplant ( <i>Centromadia parryi</i> ssp. <i>Australis</i> )	annual herb	May – November	Found in marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools at elevations between 0 - 480 meters.	1B.1	<b>Absent.</b> Suitable habitats are absent.
Vernal barley ( <i>Hordeum intercedens</i> )	annual herb	March – June	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), and vernal pools at elevations of 5 - 1000 meters.	3.2	<b>Absent.</b> Suitable habitats are absent.

<b>Common Name (<i>Scientific Name</i>)</b>	<b>Form</b>	<b>Blooming Period</b>	<b>Primary Habitat Associations</b>	<b>Status (Federal/State/ CNPS)</b>	<b>Potential to Occur</b> (observed, potentially present, presumed absent, none) (Project Site Elevation is 450m)
White pygmy-poppy ( <i>Canbya candida</i> )	annual herb	March – June	Found in gravelly, sandy, granitic areas, and Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland at elevations of 600 - 1460 meters.	4.2	<b>Absent.</b> Suitable habitats are absent. Out of elevation range for species.
White rabbit-tobacco ( <i>Pseudognaphalium leucocephalum</i> )	perennial herb	(July) August – November (December)	Sandy, gravelly, chaparral, cismontane woodland, coastal scrub, riparian woodland at elevations between 0 - 2100 meters.	2B.2	<b>Presumed absent.</b> Perennial herb confirmed absent by field survey.
White-veined monardella ( <i>Monardella hypoleuca</i> ssp. <i>hypoleuca</i> )	perennial herb	April – December	Chaparral and cismontane woodland habitats between 50 and 1,525 meters.	1B.3	<b>Presumed absent.</b> Perennial herb confirmed absent by field survey.

Common Name ( <i>Scientific Name</i> )	Form	Blooming Period	Primary Habitat Associations	Status (Federal/State/ CNPS)	Potential to Occur (observed, potentially present, presumed absent, none) (Project Site Elevation is 450m)
<p>The following status codes are applicable to special-status plants:</p> <p><u>Federally Protected Species</u>  FE (Federal Endangered): A species that is in danger of extinction throughout all or a significant portion of its range.  FT (Federal Threatened): A species that is likely to become endangered in the foreseeable future.  FC (Federal Candidate): A species for which USFWS has sufficient information on its biological status and threats to propose it as Endangered or Threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.</p> <p><u>State Protected Species</u>  CE (California Endangered): A native species or subspecies which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.  CT (California Threatened): A native species or subspecies that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as "Rare" on or before January 1, 1985, is a "Threatened species."  CR (California Rare): A species, subspecies, or variety of plant is Rare under the Native Plant Protection Act when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens. Animals are no longer listed as Rare; all animals listed as Rare before 1985 have been listed as Threatened.</p> <p><u>California Native Plant Society (CNPS) Rare Plant Rank</u>  CRPR 1A: Plants presumed extinct in California and either rare or extinct elsewhere.  CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere.  CRPR 2A: Plants presumed extirpated in California, but more common elsewhere.  CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere.  CRPR 3: A review list for plants for which there is inadequate information to assign them to one of the other lists or to reject them.  CRPR 4: A watch list for plants that are of limited distribution in California.</p> <p><u>CNPS Threat Rank</u>  The CNPS Threat Rank is an extension added onto the California Rare Plant Rank and designates the level of endangerment, as follow:</p> <ul style="list-style-type: none"> <li>• 0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat).</li> <li>• 0.2-Fairly threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat).</li> <li>• 0.3-Not very threatened in California (&lt;20% of occurrences threatened / low degree and immediacy of threat or no current threats known).</li> </ul>					

Common Name ( <i>Scientific Name</i> )	Status (Federal/State)	Primary Habitat Associations	Status on Site / Potential to Occur (Observed, Potentially Present, Presumed Absent, Absent)
<b>WILDLIFE</b>			
<b>FEDERAL OR STATE-LISTED SPECIES</b>			
<b>Invertebrates</b>			
Vernal pool fairy shrimp ( <i>Branchinecta lynchi</i> )	FT/--	Endemic to the grasslands of the central valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression rocks.	<b>Absent.</b> Suitable habitat is absent.
<b>Fishes</b>			
Santa Ana sucker ( <i>Catostomus santaanae</i> )	FT/--	Endemic to Los Angeles Basin South Coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	<b>Absent.</b> Suitable habitat is absent.
Unarmored threespine stickleback ( <i>Gasterosteus aculeatus williamsoni</i> )	FE/CE, CFP	Weedy pools, backwaters, and among emergent vegetation at the stream edge in small southern California streams. Cool (<24 C), clear water with abundant vegetation.	<b>Absent.</b> Suitable habitat is absent.
<b>Amphibians</b>			
Arroyo toad ( <i>Anaxyrus californicus</i> )	FE/SSC	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. Rivers with sandy banks, willows, cottonwoods, and sycamores. Loose, gravelly areas of streams in drier parts of the range.	<b>Absent.</b> Suitable habitat is absent.
California red-legged frog ( <i>Rana draytonii</i> )	FT/SSC	Lowlands and foothills in or near permanent source of deep water with dense shrubby or emergent vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	<b>Absent.</b> Suitable habitat is absent.

Common Name ( <i>Scientific Name</i> )	Status (Federal/State)	Primary Habitat Associations	Status on Site / Potential to Occur (Observed, Potentially Present, Presumed Absent, Absent)
Southern mountain yellow-legged frog ( <i>Rana muscosa</i> )	FE/CE	Federal listing refers to populations in the San Gabriel, San Jacinto, and San Bernardino Mountains (southern DPS). Northern DPS was determined to warrant listing as endangered April 2014, effective June 30, 2014. Always encountered within a few feet of water. Tadpoles may require 2-4 years to complete their aquatic development.	<b>Absent.</b> Suitable habitat is absent.
<b>Birds</b>			
Bank swallow ( <i>Riparia riparia</i> ) (nesting)	--/CT	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nest hole. Very uncommon spring transient and rare fall transient, and casual winter transient along the coast, formerly a fairly common summer resident, now virtually extirpated as a breeder in the region (Garrett and Dunn 1981).	<b>Absent.</b> Suitable habitat is absent.
Coastal California gnatcatcher ( <i>Polioptila californica californica</i> )	CT/SSC	Obligate, permanent resident of coastal scrub below 2,500 ft in southern California. Low, coastal scrub in arid washes, on mesas and slopes.	<b>Absent.</b> Suitable habitat is absent.
Least Bell's vireo ( <i>Vireo bellii pusillus</i> ) (nesting)	FE/CE	Rare and local summer resident in lowland riparian woodlands, breeding in willow thickets and other dense, low riparian growth in lowlands and the lower portions of the canyons, generally along permanent or semi-permanent streams.	<b>Absent.</b> Suitable habitat is absent.

Common Name ( <i>Scientific Name</i> )	Status (Federal/State)	Primary Habitat Associations	Status on Site / Potential to Occur (Observed, Potentially Present, Presumed Absent, Absent)
Swainson's hawk ( <i>Buteo swainsoni</i> ) (nesting)	--/CT	Breeds in grasslands with scattered trees. Juniper-sage flats, riparian areas, savannahs, and agricultural or ranch. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.  "Migrants observed in spring and fall (September – October) in the Antelope Valley and occasionally elsewhere in the dry interior [of Los Angeles region]. A few summer in the Antelope Valley, with breeding pairs sometimes found at isolated stands of tall trees in agricultural areas" (Garrett et. al., 2006).	<b>Potentially present.</b> Potentially transiting over the survey area, or foraging, but no nesting.
Western yellow-billed cuckoo ( <i>Coccyzus americanus</i> spp. <i>occidentalis</i> ) (nesting)	PFT/CE	Riparian forest nester along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, w/ lower story of blackberry, nettles, or wild grape.	<b>Absent.</b> Suitable habitat is absent.
<b>Mammals</b>			
Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )	Candidate CT/SSC	Found in a wide variety of habitats except subalpine and alpine. Distribution is strongly correlated with the availability of caves and cave-like roosting habitat, including abandoned mines. It has also been reported to utilize buildings, bridges, rock crevices and hollow trees as roost sites. Foraging associations include: edge habitats along streams, adjacent to and within a variety of wooded habitats.	<b>Potentially present.</b> Potentially foraging over the survey area, and potentially roosting temporarily in trees (e.g., in cavities or exfoliating bark) or structures. Large cliff and outcrop habitats in the surrounding area may contain caves or cave-like features that could serve as roost sites, including as maternity roosts or hibernacula.

Common Name ( <i>Scientific Name</i> )	Status (Federal/State)	Primary Habitat Associations	Status on Site / Potential to Occur (Observed, Potentially Present, Presumed Absent, Absent)
<b>NON-LISTED SPECIAL-STATUS SPECIES</b>			
<b>Invertebrates</b>			
Crotch bumble bee ( <i>Bombus crotchii</i> )	--/--	Coastal California east to the Sierra-Cascade Crest and South into Mexico. Food plant genera include Antirrhnum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	<b>Presumed absent.</b> Too little is known of the biology of this species to speculate whether it is present but there is limited suitable habitat within the study area. Limited food plants were located within the development area.
Gertsch's socialchemmis spider ( <i>Socalchemmis gertschi</i> )	--/--	Known only from 2 locations in Los Angeles County; (Brentwood and Topanga Canyon) collected in 1936. Source: Platnick, N.I. and D. Ubick. 2001. A revision of North American spiders of the genus <i>Socalchemmis</i> (Araneae, Tengellidae). North American Novitates No. 3339.	<b>Presumed absent.</b> Little is known about the habitat requirements (see source).
Monarch butterfly ( <i>Danaus plexippus</i> )	SA (winter roosts) are sensitive)	Roosting in large trees, primarily Eucalyptus, in winter along the coast from northern Mendocino County to Ensenada, Baja California Norte (Hogue 1993). Roost sites reported at several coastal locations, all below 350 feet elevation (data for non-sensitive locations only) (CDFW 2010).	<b>Presumed absent.</b> Adults expected to forage within the study area, but not roosting in winter at this location. Not a known roosting site.
<b>Fishes</b>			
Arroyo chub ( <i>Gila orcutti</i> )	--/SSC	Los Angeles Basin coastal streams. Slow water stream sections with mud or sand bottoms. Feed heavily on aquatic vegetation and associated aquatic invertebrates.	<b>Absent.</b> Suitable habitat is absent.
<b>Amphibians</b>			
California newt ( <i>Taricha torosa</i> )	--/SSC	Found in riparian woodland, wandering through adjacent habitats during rains. Numerous reports in Santa Monica Mountains including Big Sycamore, Decker/Encinal, Trancas, Zuma, etc. (De Lisle et al. 1986).	<b>Absent.</b> Suitable habitat is absent.



Common Name ( <i>Scientific Name</i> )	Status (Federal/State)	Primary Habitat Associations	Status on Site / Potential to Occur (Observed, Potentially Present, Presumed Absent, Absent)
Western spadefoot ( <i>Spea hammondi</i> )	--/SSC	Almost completely terrestrial, entering water only to breed. Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying. Found in cismontane woodland, coastal scrub, valley and foothills grassland, vernal pool, and wetlands.	<b>Absent.</b> Suitable habitat is absent.
<b>Reptiles</b>			
California glossy snake ( <i>Arizona elegans occidentalis</i> )	--/SSC	Patchily distributed from the Eastern Portion of San Francisco Bay, Southern San Joaquin Valley, and the coast, transverse, and peninsular ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	<b>Potentially present.</b> Unlikely, but potentially occurring within undisturbed scrub habitats within the study area.
California mountain kingsnake (San Diego population) ( <i>Lampropeltis zonata pulchra</i> )	--/SSC	Prefers canyon bottoms, but wanders to adjacent coastal sage, valley oak savanna, or southern oak woodland.	<b>Potentially present.</b> Unlikely, but potentially occurring within undisturbed scrub habitats within the study area.
Coast horned lizard ( <i>Phrynosoma blainvillii</i> )	--/SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	<b>Potentially present.</b> Potentially occurring within undisturbed scrub habitats within the study area.
Coast patch-nosed snake ( <i>Salvadora hexalepis virgulata</i> )	--/SSC	Brushy or shrubby vegetation in coastal southern California. Require small mammal burrows for refuge and overwintering sites. Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains from sea level to around 7,000 ft.	<b>Potentially present.</b> Potentially occurring within the limited undisturbed scrub habitats within the study area.

<b>Common Name (Scientific Name)</b>	<b>Status (Federal/State)</b>	<b>Primary Habitat Associations</b>	<b>Status on Site / Potential to Occur</b> (Observed, Potentially Present, Presumed Absent, Absent)
Coastal whiptail ( <i>Aspidoscelis tigris stejnegeri</i> )	--/SSC	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy or rocky.	<b>Potentially present.</b> Potentially occurring within undisturbed scrub habitats within the study area.
Silvery legless lizard ( <i>Anniella pulchra</i> )	--/SSC	Sandy areas within other habitats; also in litter under live oaks. Soil moisture is essential.	<b>Presumed absent.</b> Suitable habitat not observed within the study area.
Two-striped garter snake ( <i>Thamnophis hammondi</i> )	--/SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 feet elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	<b>Absent.</b> Suitable habitat is absent.
Western pond turtle ( <i>Emys marmorata</i> )	--/SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation below 6000 feet elevation. Needs basking sites and suitable (sand banks or grassy open fields) upland habitat up to .5 KM from water for egg laying.	<b>Absent.</b> Suitable habitat is absent.
<b>Birds</b>			
Bell's sage sparrow ( <i>Artemisiospiza belli belli</i> )	--/WL	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range. Nest located on the ground beneath a shrub or in a shrub 6-18 inches above ground. Territories about 50 yards apart.	<b>Potentially present.</b> Very low potential, as dense chamise stands are rare to non-existent within the Survey Area.
California horned lark ( <i>Eremophila alpestris actia</i> )	--/--	Coastal regions, chiefly from Sonoma county to San Diego county. Also, main part of San Joaquin Valley and East to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	<b>Potentially present.</b> Potentially foraging temporarily as a migrant but not expected to nest at the site as the site is not coastal.

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Cooper's hawk ( <i>Accipiter cooperii</i> )	--/--	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains and also live oaks.	<b>Potentially present.</b> Potentially foraging temporarily as a migrant but not expected to nest at the site, due to absence of preferred habitat.
Golden eagle ( <i>Aquila chrysaetos</i> ) (nesting and wintering)	--/CFP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas. A rare and declining resident in rugged mountain areas in the interior of the Los Angeles region. Most occur in the rugged San Gabriel Mountains and the mountains of northwestern Los Angeles County and eastern Ventura County (Garrett et al., 2006).	<b>Potentially present.</b> Potentially foraging over the site and surrounding area. There is potential nesting habitat in the surrounding area, but it would not nest within the study area.
Grasshopper sparrow ( <i>Ammodramus savannarum</i> ) (nesting)	--/SSC	Uncommon and very local summer resident on grassy slopes and mesas west of the deserts; noted only rarely in migration and in winter. For breeding, grasshopper sparrows require fairly continuous native grassland with occasional taller weedy stems or shrubs for singing perches (Garrett and Dunn 1981). Rare and declining in open tall grass hillsides with scattered shrubs (Garrett et al., 2006).	<b>Absent.</b> Suitable habitat is absent.
Loggerhead shrike ( <i>Lanius ludovicianus</i> ) (nesting)	--/SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting. Shrikes still breed uncommonly in the rural inland areas of the Los Angeles region, and are common year-round residents in the Antelope Valley (Garrett et al. 2006).	<b>Presumed absent.</b> Suitable habitat not observed within the study area. May transit the site occasionally but not expected.

Common Name ( <i>Scientific Name</i> )	Status (Federal/State)	Primary Habitat Associations	Status on Site / Potential to Occur (Observed, Potentially Present, Presumed Absent, Absent)
Southern California rufous-crowned sparrow ( <i>Aimophila ruficeps canescens</i> )	--/--	Resident in Southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.	<b>Potentially present.</b> Expected to forage temporarily as a migrant but not expected to nest at the site.
Tricolored blackbird ( <i>Agelaius tricolor</i> ) (nesting colony)	--/SSC	Highly colonial species. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	<b>Absent.</b> Suitable habitat is absent.
White-tailed kite ( <i>Elanus leucurus</i> ) (nesting)	--/CFP	Uncommon resident in open grasslands, valley oak savannas, marshes, and agricultural areas throughout the lowlands of the Los Angeles region (Garrett et al. 2006). A nomadic species that may range widely in search of prey.	<b>Potentially present.</b> Nomadic species that could potentially forage over the open habitats including the grassland within the study area on a temporarily basis, but probably would not nest at the site.
Yellow warbler ( <i>Setophaga petechia brewsteri</i> ) (nesting)	--/SSC	In the Los Angeles region, common spring (late April through May) and fall (August to mid-October) migrants throughout the lowlands; a very few remain to winter in willow thickets, exotic growth. Fairly common breeder (late March to August) in tall foothill woodlands of cottonwood, willow or alders near watercourses; some breed in lowland willow (Garrett et al., 2006)	<b>Absent.</b> Suitable habitat is absent.
Yellow-breasted chat ( <i>Icteria virens</i> ) (nesting)	--/SSC	Uncommon and local breeder (mid-April to August) in extensive riparian thickets in the lowlands; formerly more widespread. Scarce as a migrant, noted mainly in late April-May and August-September.	<b>Absent.</b> Suitable habitat is absent.

Common Name ( <i>Scientific Name</i> )	Status (Federal/State)	Primary Habitat Associations	Status on Site / Potential to Occur (Observed, Potentially Present, Presumed Absent, Absent)
<b>Mammals</b>			
American badger ( <i>Taxidea taxus</i> )	--/SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	<b>Potentially present.</b> Burrows potentially attributable to American badgers were not found within the study area. The species is not expected to inhabit the study area, but although unlikely may traverse it occasionally during foraging or dispersal movements.
California leaf-nosed bat ( <i>Macrotus californicus</i> )	--/SSC	Desert riparian, desert wash, desert scrub, desert succulent scrub, alkali scrub, and palm oasis habitats. Needs rocky, rugged terrain with mines or caves for roosting.	<b>Presumed absent.</b> Preferred habitats are absent.
Hoary bat ( <i>Lasiurus cinereus</i> )	--/--	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	<b>Potentially present.</b> Suitable foraging habitat; limited roosting habitat.
Los Angeles pocket mouse ( <i>Perognathus longimembris brevinasus</i> )	--/SSC	Lower elevation grasslands and coastal sage communities in and around the Los Angeles basin. Open ground with fine sandy soils. May not dig extensive burrows, hiding under weeds and dead leaves instead.	<b>Presumed absent.</b> Preferred habitats are absent.
Pallid bat ( <i>Antrozous pallidus</i> )	--/SSC	Occurs in a wide variety of habitats including deserts, grasslands, shrublands, woodlands and forests from sea level to mixed conifer forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	<b>Potentially present.</b> Potentially foraging over the study area, and potentially roosting temporarily in rock crevices, trees, or structures. Large cliff and outcrop habitats in the surrounding area may contain features that could serve as roost sites, including as maternity roosts or hibernacula.
San Diego black-tailed jackrabbit ( <i>Lepus californicus bennetii</i> )	--/SSC	Intermediate canopy stages of shrub habitats and open shrub / herbaceous and tree / herbaceous edges.	<b>Presumed absent.</b> Preferred habitats are absent.

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San Diego desert woodrat ( <i>Neotoma lepida intermedia</i> )	--/SSC	Coastal southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops and rocky cliffs and slopes. Occurs in a variety of habitats from sea level to 8500 feet.	<b>Potentially present.</b> Potentially present in native scrub habitats within study area.
Silver-haired bat ( <i>Lasionycteris noctivagans</i> )	--/--	Primarily a coastal and montane forest dweller, feeding over streams, ponds and open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks. Needs drinking water	<b>Presumed absent.</b> Preferred habitats are absent.
Southern grasshopper mouse ( <i>Onychomys torridus ramona</i> )	--/SSC	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.	<b>Presumed absent.</b> Preferred habitats are absent.
Spotted bat ( <i>Euderma maculatum</i> )	--/SSC	Mostly in foothills and mountains and desert regions of southern California, in a range of habitats from desert and grasslands through mixed conifer forest. Feeds over water and along washes. Feeds almost entirely on moths. Needs rock crevices in cliffs or caves for roosting.	<b>Potentially present</b> while foraging over the study area but probably not roosting within the study area. Large cliff and outcrop habitats in the surrounding area may contain features that could serve as roost sites, including as maternity roosts or hibernacula.

Common Name ( <i>Scientific Name</i> )	Status (Federal/State)	Primary Habitat Associations	Status on Site / Potential to Occur (Observed, Potentially Present, Presumed Absent, Absent)
Western mastiff bat ( <i>Eumops perotis californicus</i> )	--/SSC	Occurs in many open habitats including woodlands, coastal scrub, grasslands, chaparral, desert, and urban. Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels. Nearest location: 2 mi e Cornell, Paramount Ranch. 1-3 animals detected 31 May 1995; Malibu Creek State Park, Century Lake (Century Reservoir); Peter Strauss Ranch; China Flat in the Simi Hills.	<b>Potentially present.</b> Potentially foraging over the study area, and potentially roosting temporarily in rock crevices, trees, or structures. Large cliff and outcrop habitats in the surrounding area may contain features that could serve as a maternity roost or hibernacula.
Western red bat ( <i>Lasiurus blossevillii</i> )	--/SSC	Roosts in forests and woodlands, and feeds over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands. Foliage-dwelling, migratory bat occurs in California's Central Valley, foothills, and in similar areas of tree growth in southern California (Constantine 1998).	<b>Potentially present.</b> Potentially foraging over the study area. The survey area does not support suitable habitat for roosting.

Common Name ( <i>Scientific Name</i> )	Status (Federal/State)	Primary Habitat Associations	Status on Site / Potential to Occur (Observed, Potentially Present, Presumed Absent, Absent)
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Federally Protected Species

FE (Federal Endangered): A species that is in danger of extinction throughout all or a significant portion of its range.

FT (Federal Threatened): A species that is likely to become endangered in the foreseeable future.

FC (Federal Candidate): A species for which USFWS has sufficient information on its biological status and threats to propose it as Endangered or Threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.

FSC (Federal Species of Concern): A species under consideration for listing, for which there is insufficient information to support listing at this time. These species may or may not be listed in the future, and many of these species were formerly recognized as "Category-2 Candidate" species.

PFT (Proposed Federal Threatened): A species that has been formally proposed for listing as Threatened under the ESA.

State Protected Species

CE (California Endangered): A native species or subspecies which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

CT (California Threatened): A native species or subspecies that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as "Rare" on or before January 1, 1985, is a "Threatened species."

SSC (California Species of Special Concern): Animals that are not listed under the California Endangered Species Act, but which nonetheless 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist.

CFP (California Fully Protected): This designation originated from the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians, reptiles, and birds. Most fully protected species have also been listed as Threatened or Endangered species under the more recent endangered species laws and regulations. California Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.



**APPENDIX B.2**

**Rare Plant Survey Report**



June 25, 2020

Las Virgenes Municipal Water District  
4232 Las Virgenes Road  
Calabasas, CA 91302

Attn: Mr. John Zhao

**Subj: Rare Plant Survey Report for the Las Virgenes Municipal Water District Twin Lakes Water Tank and Pump Station Upgrade Project  
(Envicom Project No. 49-058-101)**

Dear Mr. Zhao:

This letter summarizes the results of rare plant surveys at the Las Virgenes Municipal Water District (District) Twin Lakes Water Tank and Twin Lakes Pump Station Upgrade Project (project) site. This report includes descriptions of potentially occurring special status plant species as well as a compendia of plant species observed.

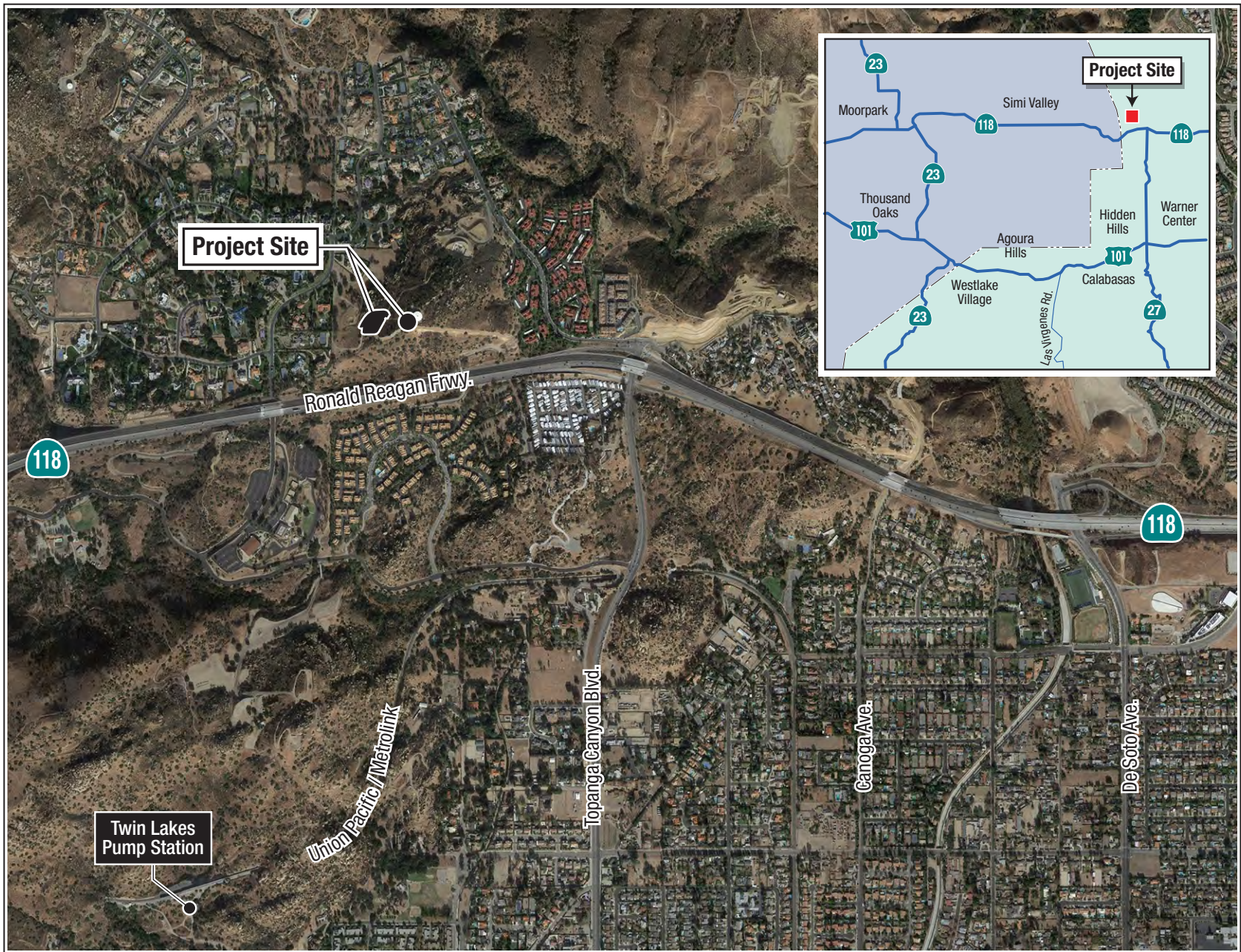
### **PROJECT UNDERSTANDING**

To adequately serve the Deerlake Ranch residential development (Amended Vesting Tentative Tract No. 53138) with potable water, the District needs to update and expand the existing Twin Lakes Tank facility.

The facilities that will be modified consist of the water storage area (existing tanks and adjacent area; labeled 'Project Site' in **Figure 1, Project Location Map**) as well as the existing pump station (labeled 'Twin Lakes Pump Station' in Figure 1). The project site is located approximately 550 feet due north of the 118 freeway, east of Iverson Road and west of Poema Place at the existing District water storage facility. The existing Twin Lakes Pump Station is located south of the 118-freeway as shown in Figure 1, and occupies approximately 0.25 acres that has been graded level, is primarily paved and developed with water pumps and related infrastructure, and is surrounded by fencing. Therefore, no significant impacts are expected at the pump station; hence the remainder of this report will focus on potential biological resources associated with the water storage area only.

The District proposes the demolition and replacement of one (1) of two (2) water storage tanks located on a hilltop approximately 1.5 miles southwest of the residential development in Chatsworth. Project updates would include the installation and operation of additional pumps to maintain adequate pressures to serve the 314 single-family home residential development and associated facilities (recreation and sheriff buildings). The project would require grading of approximately 0.21 acres, primarily on land already developed where the current water tank to be replaced sits. A further 0.57 acres adjacent to the access road would be temporarily impacted for staging of equipment and materials for Project construction.





Aerial Source: GoogleEarth Pro, Dec. 31, 2018.

## METHODS

A literature review was performed in preparation for the field survey that included information available in standard biological references (e.g., Baldwin et al. 2012; Sawyer, Keeler-Wolf, and Evens 2009), and relevant lists and databases pertaining to the status and known occurrences of sensitive and special-status resources. The following sources were among those reviewed in preparation for field surveys, or that were consulted during preparation of this report (for a complete list see the references section):

- *Biogeographic Information and Observation System (BIOS)*, California Department of Fish and Wildlife (CDFW), data as of June 18, 2020;
- *California Natural Diversity Database (CNDDDB) Rarefind 5* report for the 7.5' USGS Oat Mountain quadrangle, CDFW, data as of June 18, 2020;
- *California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California* report for the 7.5' USGS Oat Mountain quadrangle and eight (8) adjacent quadrangles, CNPS, data as of May 20, 2020;
- *FWS Critical Habitat Mapper for Threatened and Endangered Species*, U.S. Fish and Wildlife Service (USFWS), data as of May 20, 2020; and
- *List of Special Vascular Plants, Bryophytes, and Lichens*, CDFW, January 2020; and
- *Natural Communities List*, CDFW, November 8, 2019.

Ms. Elizabeth Kempton, Envicom Corporation (Envicom) on-call biologist conducted a survey of the project site including a 20-foot buffer<sup>1</sup> (hereafter referred to as the Study Area) on May 20, 2020. The biological survey was conducted between the hours of 9:30 a.m. and 11:30 a.m. in temperate, calm, and clear conditions (mid-70s°F) with light winds of 0 to 5 m.p.h. The survey involved a search for special-status and regulated biological resources, including rare, threatened, and endangered plant species, natural communities of special concern, and locally protected species. All observed plant species were identified and recorded to the lowest taxonomic level possible. Plant nomenclature follows *The Jepson Manual: Vascular Plants of California, 2nd edition* (Baldwin B., et al. 2012). Surveys of non-vascular plants (lichens, mosses, liverworts, and hornworts) were not undertaken.

Data collected during the survey included a record of all plants and plant communities present at the site during peak spring blooming time. Plant species observed by Envicom during the site survey are presented as **Attachment 1**. Several photographs were taken as a record of site conditions at the time of the survey, and are presented as **Plate 1, Representative Site Photographs**.

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<sup>1</sup> A 20-foot survey area was established based on the level of proposed development and temporary work areas as illustrated in plans provided by PACE Water Engineering.



**Photo 1A** – Looking east toward existing water tank area along access road. The existing tower area has been lined with planted trees, primarily eucalyptus species. Photo taken May 10, 2020.



**Photo 1B** – Looking westerly, just outside of fenced area at existing tanks. Photo taken May 10, 2020.



**Photo 1C** – Looking west along the dirt access road within the proposed temporary equipment staging area. Note high levels of disturbance exhibited by an abundant presence of non-native short pod mustard. Photo taken May 10, 2020.



**Photo 1D** – Looking north from the proposed temporary equipment staging area. Photo taken May 10, 2020.

## RESULTS

### Plant Species Observed

A total of 77 vascular plant taxa were identified during the survey, including 67 dicots and nine (9) monocots, and 1 fern. Twenty-three of the plants observed were non-native and 54 were native. A complete list of the vascular plant species observed in the survey area is provided in Attachment 1.

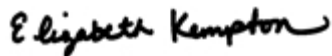
### Potential for Special-Status Plant Species

While no special-status plant species have potential to occur within the proposed project footprint surrounding the current water storage facility due to its highly modified and disturbed condition, several special-status plant species have a low potential to occur within the survey area, particularly in the proposed staging area. An evaluation of the potential for occurrence at the site of special-status plant species known to occur in the region was undertaken through a search of the CNPS Online Inventory of Rare and Endangered Plants, 8th ed. (CNPS 2020) and the California Department of Fish and Wildlife's Natural Diversity Data Base (CNDDDB) Rarefind 5 application (CDFW 2020) for sensitive "elements" reported within the Oat Mountain quadrangle and eight (8) adjacent quadrangles that surround it. The CNDDDB/CNPS derived lists are provided in **Attachment 2**. Based upon a review of the resources and databases listed above, 51 special-status vascular plant species have been documented within the nine USGS quadrangles.

## SUMMARY

The survey for rare plants was comprehensive for the project footprint and was conducted during the peak spring blooming period for special status plant species with potential to occur. No special status plant species were observed during the survey. Additionally, no sensitive plant communities were found.

Sincerely,



Elizabeth Kempton  
Biologist

## ATTACHMENTS:

- Attachment A: References
- Attachment 1: Plant Species Observed, May 20, 2020
- Attachment 2: CNDDDB/CNPS Literature Search Results

**ATTACHMENT A**  
**REFERENCES**

## REFERENCES

- Baldwin, B. G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson manual: vascular plants of California, second edition. University of California Press, Berkeley.
- California Department of Fish and Wildlife, Natural Communities List. November 2019.
- California Natural Diversity Database (CNDDB) Rarefind 5 Element Occurrence Report for Calabasas and eight (8) surrounding USGS quadrangles, California Department of Fish and Wildlife, data as of June 18, 2020.
- CDFW and CNPS. Vegetation Classification of the Santa Monica Mountains Natural Recreation Area and Environs in Ventura and Los Angeles Counties, California, January 2006.
- CNPS, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website <http://www.rareplants.cnps.org> [Accessed May 20, 2020].
- Envicom. 2020. Biological Resources Letter Report – LVMWD Twin Lakes Water Tank Project (Envicom Project No. 49-058-101)
- Google Earth Pro. 2013. Version 7.3.2.5491. Build Date 3/5/2019.
- Jepson Online Interchange: California Floristics, U.C. Berkeley, data as of May 20, 2020. <http://ucjeps.berkeley.edu/interchange/>
- List of Special Vascular Plants, Bryophytes, and Lichens, California Department of Fish and Wildlife, January 2020.
- Prigge, Barry A. and Arthur C. Gibson. 2013. A Naturalist's Flora of the Santa Monica Mountains and Simi Hills, California. Data accessed through Wildflowers of the Santa Monica Mountains National Recreation Area website: <http://www.smmflowers.org/>.
- Sawyer, J.O., T. Keeler-Wolf, and J. M. Evens, A Manual of California Vegetation, 2nd ed., California Native Plant Society Press, Sacramento, California, 2009.
- U.S. Fish and Wildlife Service, FWS Critical Habitat Mapper for Threatened and Endangered Species, U.S. Fish and Wildlife Service, data as of May 20, 2020.



**ATTACHMENT 1**

**Plant Species Observed, May 20, 2020**

**Attachment 1**  
**Plant Species Observed, May 20, 2020**

GROUP Family <i>Scientific Name</i>	Common Name
<b>FLOWERING PLANTS-DICOTS</b>	
Adoxaceae (Muskroot Family)	
<i>Sambucus nigra</i> ssp. <i>caerulea</i>	elderberry
Anacardiaceae (Sumac or Cashew Family)	
<i>Malosma laurina</i>	laurel sumac
Apiaceae (Carrot Family)	
<i>Torilis arvensis</i>	field hedge parsley
Apocynaceae (Dogbane Family)	
<i>Asclepias fascicularis</i>	narrow leaf milkweed
Asteraceae (Sunflower family)	
<i>Artemisia californica</i>	California sagebrush
<i>Artemisia douglasiana</i>	California mugwort
<i>Ambrosia acanthicarpa</i>	annual bursage
* <i>Carduus pycnocephalus</i> ssp. <i>pycnocephalus</i>	Italian thistle
* <i>Centaurea melitensis</i>	toçalote
* <i>Cirsium vulgare</i>	bull thistle
<i>Corethrogyne filaginifolia</i>	common sandaster
<i>Encelia californica</i>	California brittlebush
<i>Erigeron canadensis</i>	horseweed
<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	golden yarrow
<i>Hazardia squarrosa</i>	saw-toothed goldenbush
* <i>Hypochaeris glabra</i>	smooth cats ear
* <i>Lactuca serriola</i>	prickly lettuce
<i>Logfia filaginoides</i>	California cottonrose
<i>Malacothrix saxatilis</i>	cliff aster
<i>Pseudognaphalium californica</i>	ladies' tobacco
* <i>Sonchus oleraceus</i>	sow thistle
Boraginaceae (Borage or Waterleaf Family)	
<i>Cryptantha intermedia</i>	common cryptantha
<i>Cryptantha micrantha</i>	purple root cryptantha
<i>Eucrypta chrysanthemifolia</i>	common eucrypta
<i>Emmenanthe penduliflora</i> var. <i>penduliflora</i>	whispering bells
<i>Phacelia cicutaria</i>	caterpillar phacelia
Brassicaceae (Mustard Family)	
* <i>Brassica nigra</i>	black mustard
* <i>Hirschfeldia incana</i>	hoary mustard
Cactaceae (Cactus Family)	
* <i>Opuntia ficus-indica</i>	mission cactus
* <i>Harrisia</i> sp.	columnar cactus
Caryophyllaceae (Pink Family)	
* <i>Silene gallica</i>	common catchfly

<b>GROUP</b> <b>Family</b> <b>Scientific Name</b>	<b>Common Name</b>
Convolvaceae (Bindweed Family)	
<i>Cuscuta californica</i>	California dodder
Cucurbitaceae (Gourd Family)	
<i>Marah macrocarpa</i>	old man root
Ericaceae (Heather family)	
<i>Arctostaphylos glauca</i>	bigberry manzanita
Euphorbiaceae (Spurge Family)	
<i>Croton setiger</i>	turkey-mullein
<i>Euphorbia albomarginata</i>	rattlesnake sandmat
* <i>Euphorbia peplus</i>	petty spurge
Fabaceae (Legume Family)	
<i>Acmispon glaber</i>	deerweed
<i>Lupinus hirsutissimus</i>	Stinging lupine
<i>Lupinus succulentus</i>	arroyo lupine
* <i>Melilotus indicus</i>	yellow sweetclover
Fagaceae (Oak Family)	
<i>Quercus agrifolia</i>	coast live oak
Geraniaceae (Geranium family)	
* <i>Erodium cicutarium</i>	coastal heron's bill
Lamiaceae (Mint Family)	
* <i>Marrubium vulgare</i>	white horehound
<i>Salvia apiana</i>	white sage
<i>Salvia mellifera</i>	black sage
Myrsinaceae (Myrsine family)	
<i>Lysimachia arvensis</i>	Scarlet pimpernel
Myrtaceae (Myrtle Family)	
* <i>Eucalyptus globulus</i>	blue gum tree
* <i>Eucalyptus polyanthemos</i>	silver dollar gum
* <i>Eucalyptus sideroxylon</i>	red iron bark
* <i>Eucalyptus</i> sp.	other gum trees
Nyctaginaceae (Four o'clock Family)	
<i>Mirabilis laevis</i> var. <i>crassifolia</i>	California four o'clock
Onagraceae (Primrose Family)	
<i>Eulobus californicus</i>	California primrose
<i>Camissonia strigulosa</i>	contorted primrose
<i>Camissoniopsis micrantha</i>	Spencer primrose
<i>Clarkia purpurea</i>	purple clarkia
Papaveraceae (Poppy Family)	
<i>Eschscholzia californica</i>	California poppy
Polygonaceae (Buckwheat Family)	
<i>Chorizanthe staticoides</i>	Turkish rugging
<i>Eriogonum elongatum</i>	long-stemmed buckwheat
<i>Eriogonum fasciculatum</i> var. <i>foliolosum</i>	California buckwheat
<i>Polygonum aviculare</i>	prostrate knotweed
<i>Pterostegia drymarioides</i>	fairy mist

<b>GROUP</b> <b>Family</b> <b>Scientific Name</b>	<b>Common Name</b>
Rhamnaceae (Buckthorn Family)	
<i>Rhamnus ilicifolia</i>	hollyleaf redberry
Rosaceae (Rose Family)	
<i>Adenostoma fasciculatum</i>	chamise
Rubiaceae (Madder Family)	
<i>Galium angustifolium</i>	narrow leaved bedstraw
Salicaceae ( <i>Willow Family</i> )	
<i>Populus fremontii</i>	Fremont cottonwood
Solanaceae (Nightshade Family)	
<i>Solanum xantii</i>	purple nightshade
<b>FLOWERING PLANTS-MONOCOTS</b>	
Agavaceae (Century Plant Family)	
<i>Hesperoyucca whipplei</i>	chaparral yucca
Poaceae (Grass Family)	
* <i>Avena barbata</i>	slender wild oat
* <i>Avena fatua</i>	wild oat
* <i>Bromus madritensis</i> var. <i>rubens</i>	foxtail brome
* <i>Bromus tectorum</i>	downy chess
<i>Elymus condensatus</i>	giant wild rye
* <i>Festuca myuros</i>	rattail fescue
* <i>Pennisetum setaceum</i>	fountain grass
* <i>Schismus barbatus</i>	old han schismus
<b>FERNS AND ALLIES</b>	
Pteridaceae (Brake Family)	
<i>Pellaea andromedifolia</i>	Coffee fern

**ATTACHMENT 2**  
**CNDDDB/CNPS Literature Search Results**

\*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

## Plant List

48 matches found. [Click on scientific name for details](#)

### Search Criteria

Found in Quads 3411846, 3411845, 3411844, 3411836, 3411835, 3411834, 3411826 3411825 and 3411824;

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Display Photos](#)

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
<a href="#">Acanthoscyphus parishii var. parishii</a>	Parish's oxytheca	Polygonaceae	annual herb	Jun-Sep	4.2	S3S4	G4? T3T4
<a href="#">Astragalus brauntonii</a>	Braunton's milk-vetch	Fabaceae	perennial herb	Jan-Aug	1B.1	S2	G2
<a href="#">Berberis nevini</a>	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar-Jun	1B.1	S1	G1
<a href="#">Calochortus catalinae</a>	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	4.2	S3S4	G3G4
<a href="#">Calochortus clavatus var. clavatus</a>	club-haired mariposa lily	Liliaceae	perennial bulbiferous herb	(Mar)May-Jun	4.3	S3	G4T3
<a href="#">Calochortus clavatus var. gracilis</a>	slender mariposa lily	Liliaceae	perennial bulbiferous herb	Mar-Jun(Nov)	1B.2	S2S3	G4T2T3
<a href="#">Calochortus fimbriatus</a>	late-flowered mariposa lily	Liliaceae	perennial bulbiferous herb	Jun-Aug	1B.3	S3	G3
<a href="#">Calochortus palmeri var. palmeri</a>	Palmer's mariposa lily	Liliaceae	perennial bulbiferous herb	Apr-Jul	1B.2	S2	G3T2
<a href="#">Calochortus plummerae</a>	Plummer's mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	4.2	S4	G4
<a href="#">Calystegia peirsonii</a>	Peirson's morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	4.2	S4	G4
<a href="#">Canbya candida</a>	white pygmy-poppy	Papaveraceae	annual herb	Mar-Jun	4.2	S3S4	G3G4
<a href="#">Castilleja gleasoni</a>	Mt. Gleason paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	May-Jun(Sep)	1B.2	S2	G2
<a href="#">Centromadia parryi ssp. australis</a>	southern tarplant	Asteraceae	annual herb	May-Nov	1B.1	S2	G3T2
<a href="#">Cercocarpus betuloides var. blancheae</a>	island mountain-mahogany	Rosaceae	perennial evergreen shrub	Feb-May	4.3	S4	G5T4
<a href="#">Chorizanthe parryi var. fernandina</a>	San Fernando Valley spineflower	Polygonaceae	annual herb	Apr-Jul	1B.1	S1	G2T1
<a href="#">Chorizanthe parryi var. parryi</a>	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S2	G3T2

<a href="#"><u>Clinopodium mimuloides</u></a>	monkey-flower savory	Lamiaceae	perennial herb	Jun-Oct	4.2	S3	G3
<a href="#"><u>Convolvulus simulans</u></a>	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
<a href="#"><u>Deinandra minthornii</u></a>	Santa Susana tarplant	Asteraceae	perennial deciduous shrub	Jul-Nov	1B.2	S2	G2
<a href="#"><u>Deinandra paniculata</u></a>	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov(Dec)	4.2	S4	G4
<a href="#"><u>Delphinium parryi ssp. purpureum</u></a>	Mt. Pinos larkspur	Ranunculaceae	perennial herb	May-Jun	4.3	S4	G4T4
<a href="#"><u>Dodecahema leptoceras</u></a>	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S1	G1
<a href="#"><u>Dudleya blochmaniae ssp. blochmaniae</u></a>	Blochman's dudleya	Crassulaceae	perennial herb	Apr-Jun	1B.1	S2	G3T2
<a href="#"><u>Dudleya cymosa ssp. agourensis</u></a>	Agoura Hills dudleya	Crassulaceae	perennial herb	May-Jun	1B.2	S1	G5T1
<a href="#"><u>Dudleya multicaulis</u></a>	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	1B.2	S2	G2
<a href="#"><u>Harpagonella palmeri</u></a>	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	4.2	S3	G4
<a href="#"><u>Helianthus inexpectatus</u></a>	Newhall sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	1B.1	S1	G1
<a href="#"><u>Hordeum intercedens</u></a>	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
<a href="#"><u>Horkelia cuneata var. puberula</u></a>	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	1B.1	S1	G4T1
<a href="#"><u>Hulsea vestita ssp. parryi</u></a>	Parry's sunflower	Asteraceae	perennial herb	Apr-Aug	4.3	S4	G5T4
<a href="#"><u>Juglans californica</u></a>	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	4.2	S4	G4
<a href="#"><u>Lasthenia glabrata ssp. coulteri</u></a>	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
<a href="#"><u>Lepidium virginicum var. robinsonii</u></a>	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	4.3	S3	G5T3
<a href="#"><u>Lilium humboldtii ssp. ocellatum</u></a>	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	4.2	S4?	G4T4?
<a href="#"><u>Lupinus paynei</u></a>	Payne's bush lupine	Fabaceae	perennial shrub	Mar-Apr(May-Jul)	1B.1	S1	G1Q
<a href="#"><u>Malacothamnus davidsonii</u></a>	Davidson's bush-mallow	Malvaceae	perennial deciduous shrub	Jun-Jan	1B.2	S2	G2
<a href="#"><u>Navarretia fossalis</u></a>	spreading navarretia	Polemoniaceae	annual herb	Apr-Jun	1B.1	S2	G2
<a href="#"><u>Navarretia ojaiensis</u></a>	Ojai navarretia	Polemoniaceae	annual herb	May-Jul	1B.1	S2	G2
<a href="#"><u>Navarretia setiloba</u></a>	Piute Mountains navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
<a href="#"><u>Nolina cismontana</u></a>	chaparral nolina	Ruscaceae	perennial evergreen shrub	(Mar)May-Jul	1B.2	S3	G3
<a href="#"><u>Opuntia basilaris var. brachyclada</u></a>	short-joint beavertail	Cactaceae	perennial stem succulent	Apr-Jun(Aug)	1B.2	S3	G5T3
<a href="#"><u>Orcuttia californica</u></a>	California Orcutt grass	Poaceae	annual herb	Apr-Aug	1B.1	S1	G1
<a href="#"><u>Phacelia hubbyi</u></a>	Hubby's phacelia	Hydrophyllaceae	annual herb	Apr-Jul	4.2	S4	G4
<a href="#"><u>Phacelia mohavensis</u></a>	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	4.3	S4	G4Q

<a href="#">Pseudognaphalium leucocephalum</a>	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	2B.2	S2	G4
<a href="#">Senecio aphanactis</a>	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
<a href="#">Stylocline masonii</a>	Mason's neststraw	Asteraceae	annual herb	Mar-May	1B.1	S1	G1
<a href="#">Symphyotrichum greatae</a>	Greata's aster	Asteraceae	perennial rhizomatous herb	Jun-Oct	1B.3	S2	G2

### Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org> [accessed 18 June 2020].

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#### Contributors

[The Calflora Database](#)

[The California Lichen Society](#)

[California Natural Diversity Database](#)

[The Jepson Flora Project](#)

[The Consortium of California Herbaria](#)

[CalPhotos](#)

#### Questions and Comments

[rareplants@cnps.org](mailto:rareplants@cnps.org)





# Selected Elements by Common Name

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Query Criteria:** Quad (Val Verde (3411846) OR Newhall (3411845) OR Mint Canyon (3411844) OR Santa Susana (3411836) OR Oat Mountain (3411835) OR San Fernando (3411834) OR Calabasas (3411826) OR Canoga Park (3411825) OR Van Nuys (3411824)) AND Taxonomic Group (Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b>Blochman's dudleya</b> <i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	PDCRA04051	None	None	G3T2	S2	1B.1
<b>Braunton's milk-vetch</b> <i>Astragalus brauntonii</i>	PDFAB0F1G0	Endangered	None	G2	S2	1B.1
<b>California Orcutt grass</b> <i>Orcuttia californica</i>	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
<b>chaparral nolina</b> <i>Nolina cismontana</i>	PMAGA080E0	None	None	G3	S3	1B.2
<b>chaparral ragwort</b> <i>Senecio aphanactis</i>	PDAST8H060	None	None	G3	S2	2B.2
<b>Coulter's goldfields</b> <i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	PDAST5L0A1	None	None	G4T2	S2	1B.1
<b>Davidson's bush-mallow</b> <i>Malacothamnus davidsonii</i>	PDMAL0Q040	None	None	G2	S2	1B.2
<b>Greata's aster</b> <i>Symphyotrichum greatae</i>	PDASTE80U0	None	None	G2	S2	1B.3
<b>late-flowered mariposa-lily</b> <i>Calochortus fimbriatus</i>	PMLIL0D1J2	None	None	G3	S3	1B.3
<b>many-stemmed dudleya</b> <i>Dudleya multicaulis</i>	PDCRA040H0	None	None	G2	S2	1B.2
<b>mesa horkelia</b> <i>Horkelia cuneata</i> var. <i>puberula</i>	PDROS0W045	None	None	G4T1	S1	1B.1
<b>Nevin's barberry</b> <i>Berberis nevinii</i>	PDBER060A0	Endangered	Endangered	G1	S1	1B.1
<b>Newhall sunflower</b> <i>Helianthus inexpectatus</i>	PDAST4N250	None	None	G1	S1	1B.1
<b>Ojai navarretia</b> <i>Navarretia ojaiensis</i>	PDPLM0C130	None	None	G2	S2	1B.1
<b>Palmer's grapplinghook</b> <i>Harpagonella palmeri</i>	PDBOR0H010	None	None	G4	S3	4.2
<b>Palmer's mariposa-lily</b> <i>Calochortus palmeri</i> var. <i>palmeri</i>	PMLIL0D122	None	None	G3T2	S2	1B.2
<b>Parry's spineflower</b> <i>Chorizanthe parryi</i> var. <i>parryi</i>	PDPGN040J2	None	None	G3T2	S2	1B.1
<b>Payne's bush lupine</b> <i>Lupinus paynei</i>	PDFAB2B580	None	None	G1Q	S1	1B.1



**Selected Elements by Common Name**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



<b>Species</b>	<b>Element Code</b>	<b>Federal Status</b>	<b>State Status</b>	<b>Global Rank</b>	<b>State Rank</b>	<b>Rare Plant Rank/CDFW SSC or FP</b>
<b>Peirson's morning-glory</b> <i>Calystegia peirsonii</i>	PDCON040A0	None	None	G4	S4	4.2
<b>Piute Mountains navarretia</b> <i>Navarretia setiloba</i>	PDPLM0C0S0	None	None	G2	S2	1B.1
<b>Plummer's mariposa-lily</b> <i>Calochortus plummerae</i>	PMLIL0D150	None	None	G4	S4	4.2
<b>Robinson's pepper-grass</b> <i>Lepidium virginicum var. robinsonii</i>	PDBRA1M114	None	None	G5T3	S3	4.3
<b>San Fernando Valley spineflower</b> <i>Chorizanthe parryi var. fernandina</i>	PDPGN040J1	Proposed Threatened	Endangered	G2T1	S1	1B.1
<b>Santa Susana tarplant</b> <i>Deinandra minthornii</i>	PDAST4R0J0	None	Rare	G2	S2	1B.2
<b>short-joint beavertail</b> <i>Opuntia basilaris var. brachyclada</i>	PDCAC0D053	None	None	G5T3	S3	1B.2
<b>slender mariposa-lily</b> <i>Calochortus clavatus var. gracilis</i>	PMLIL0D096	None	None	G4T2T3	S2S3	1B.2
<b>slender-horned spineflower</b> <i>Dodecahema leptoceras</i>	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
<b>spreading navarretia</b> <i>Navarretia fossalis</i>	PDPLM0C080	Threatened	None	G2	S2	1B.1
<b>white rabbit-tobacco</b> <i>Pseudognaphalium leucocephalum</i>	PDAST440C0	None	None	G4	S2	2B.2
<b>white-veined monardella</b> <i>Monardella hypoleuca ssp. hypoleuca</i>	PDLAM180A5	None	None	G4T3	S3	1B.3

**Record Count: 30**

## **APPENDIX C**

### **Phase I Cultural Resources Assessment**



October 18, 2019

Las Virgenes Municipal Water District  
4232 Las Virgenes Road  
Calabasas, CA 91302

Attn: Mr. John Zhao

**Subj: Cultural Resources Phase I Assessment for Twin Lakes Tank and Pump Station  
Upgrades for Deerlake Tract 53138. (Envicom Project #49-058-101)**

Dear Mr. Zhao,

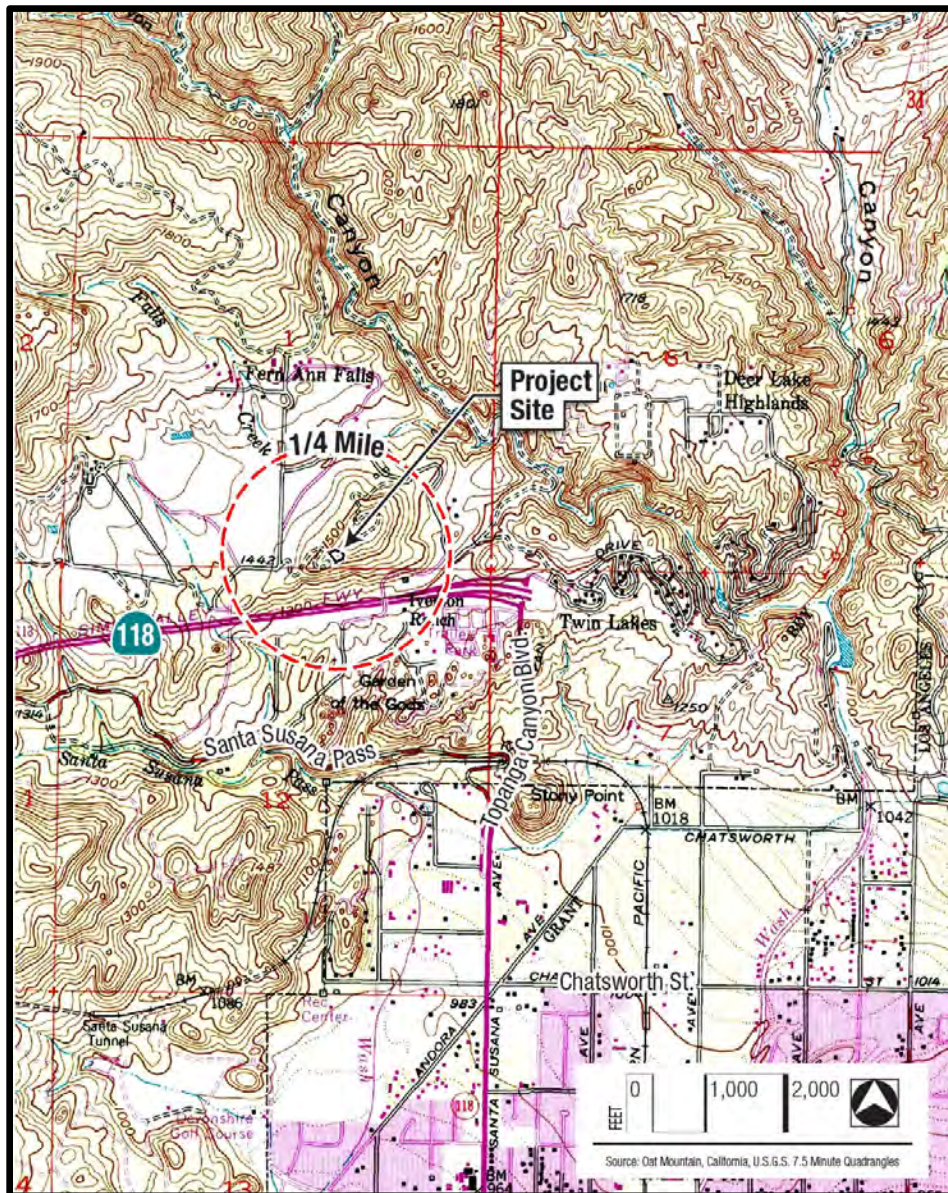
In October of 2019, Envicom Corporation (Envicom) completed a Phase I Cultural Resource Assessment for the Twin Lakes Tank and Pump Station Upgrade Project (Project) in Los Angeles County (**Figure 1**). The Project will install additional mechanical pumps at the Twin Lakes Station in Chatsworth, and replace an existing 400,000-gallon water tank with a new 1,000,000-gallon water tank at the Twin Lakes Water Tank site, to provide adequate water storage and pressure to the Deerlake Ranch residential development currently under construction in unincorporated Los Angeles County (**Figure 2** and **Figure 3**). The Twin Lakes Water Tank Site currently includes an additional 1,600,000-gallon water tank that will be retained adjacent to the proposed new water tank. The development footprint for this assessment is the circumference of the new proposed water tank and surrounding paved driveway, plus a 20-foot buffer, as well as the Project staging yard, plus a 20-foot buffer. The general location of the Project is as follows:

**United States Geological Survey 7.5' Quadrangles: Oat Mountain  
Township: 2 North Range: 17 West  
Latitude: 34°16'44.29"North Longitude: 118°36'44.13"West**

The Phase I Cultural Resource Assessment included a cultural resource record search conducted by the South Central Coastal Information Center (SCCIC) and a Native American cultural resource record search conducted by the California Native American Heritage Commission (NAHC). Both record searches examined the Project site plus a 0.25-mile area ("study area") around the Project. Additional databases examined during the Phase I assessment included historic regional maps, historic United States Geological Survey (USGS) maps, and historic Google Earth images. The University of California Santa Barbara (UCSB) Library Historic Aerial Photograph Database was also examined. Geology maps were also referenced to create a paleontological assessment of the project.



The purpose of the record searches is to identify any known cultural resources previously recorded within or immediately adjacent to the proposed Project area, to provide cultural resource context for the Project from the examination of the study area, and to assess the overall cultural resource sensitivity of the Project region. A cultural resource is often defined as any building, structure, object, or archaeological site older than 50-years in age, and can include historic or prehistoric locations of human habitation.



*Figure 1: Project location in Los Angeles County, California, with the 0.25-mile study area shown.*



**Figure 2: The Project development footprint, showing the existing tank to be removed, and the footprint of the proposed new water tank and paving, plus the 20-foot buffer (2019 Google Earth Image).**



**Figure 3: The Project development footprint, showing the development footprint of the staging yard, plus a 20-foot buffer (2019 Google Earth Image).**

## RECORD SEARCH RESULTS

### *SCCIC and NAHC Record Searches*

On October 2, 2019, Envicom visited the SCCIC and searched their database for cultural resources located within the Project development footprint and within the 0.25-mile study area (see **Figure 1**). The SCCIC record search was positive for previously identified cultural resources located within the Project development footprint, and within the surrounding buffer area. The record search was also positive for previously completed cultural resource reports, both within both the Project development footprint and in the surrounding buffered study area.

The cultural resource that is within the Project development footprint is P-19-000881 (CA-LAN-881), a lithic scatter on top of the flat hill, where the two existing water tanks are located, which had already been disturbed when recorded in 1978. The recorded cultural resources located within the 0.25-mile study area are as follows: P-19-000813 (Lithic Scatter), P-19-000814 (Lithic Scatter), P-19-000815 (Lithic Scatter), P-19-000879 (Rock Shelter), and P-19-150424 (1900s House Structure). None of these resources are located adjacent to the Project development footprint.

The SCCIC further identified that three cultural resource reports involved the Project development footprint. The first cultural resource report (LA-00306) was conducted by UCLA in 1978, with Terence N. D'Altroy as lead author, with Charles Singer as and D'Altroy both completing the site records for the project. The final findings are presented in a cultural resource report titled "*Report of the Potential Negative Impact on Archaeological Resources of the Proposed Development of Tentative Tract No. 34494, North of Chatsworth, California.*" It was this report that first identified the CA-LAN-881 (P-19-000881) lithic scatter, which was noted as being heavily disturbed in the report from past road construction and use, site grading, and landscaping of the hill area.

The second cultural resource report (LA-0762) was written by the Northridge Archaeological Research Center of California State University, Northridge (CSUN) in 1979, and was titled "*Assessment of the Historic Resources Present within Tentative Tract number 34494, Chatsworth, California.*" This report was exclusively a supplemental report to the 1978 D'Altroy report, and concentrated on the early historic resources in the tentative track development area.

The third report was a later site management plan for the cultural resources located within the same tentative tract. This report included a revisit of all cultural resources located within the by that time titled "Cadillac-Fairview Property" in Chatsworth, California. This archaeology project was managed by John Foster, was completed in 1981, and resulted in a cultural resource report with the title "*Cultural Resource Management Plan for Tentative Tract No. 34494,*" Greenwood and Associates, 1981. The then titled Cadillac-Fairview Property still included the current development footprint.

Foster attempted to revisit the seven (7) archaeological sites previously-recorded by D’Altroy and Singer as part of the management plan work. Foster was able to find two of the seven archaeological sites, neither of which was cultural resource (CA-LAN-881). Foster concluded that the location of CA-LAN-881 was heavily disturbed from additional water tank construction, which probably destroyed the site. However, he did recommend monitoring the general site area as a precaution.

For this study, since previous archaeological studies had determined that CA-LAN-881 (P-19-000881), a scant lithic scatter, was severely impacted by previous modern road development and the construction of the first water tank, and probably was destroyed by the construction of the second water tank, it no longer exists as a cultural resource. Current management of the original cultural resource site area will reflect this status.

The NAHC was contacted on October 3, 2019, with a similar record search request. The results from the 2019 NAHC record search were received on October 7, 2019, with negative findings. If the Lead Agency for the Project is required to perform an AB-52 process, the NAHC letter should be made a part of the consultation record.

Copies of the request and response letter from the NAHC are included in **Appendix A**. The Principal Author’s resume is provided in **Appendix B**. Envicom did not contact Native American groups on the NAHC list, as communications with Tribal Group representatives is the responsibility of the Lead Agency if required as part of this Project. The findings from the SCCIC as to a cultural resource’s physical location and details are considered confidential by state law and are, therefore, not included in this report.

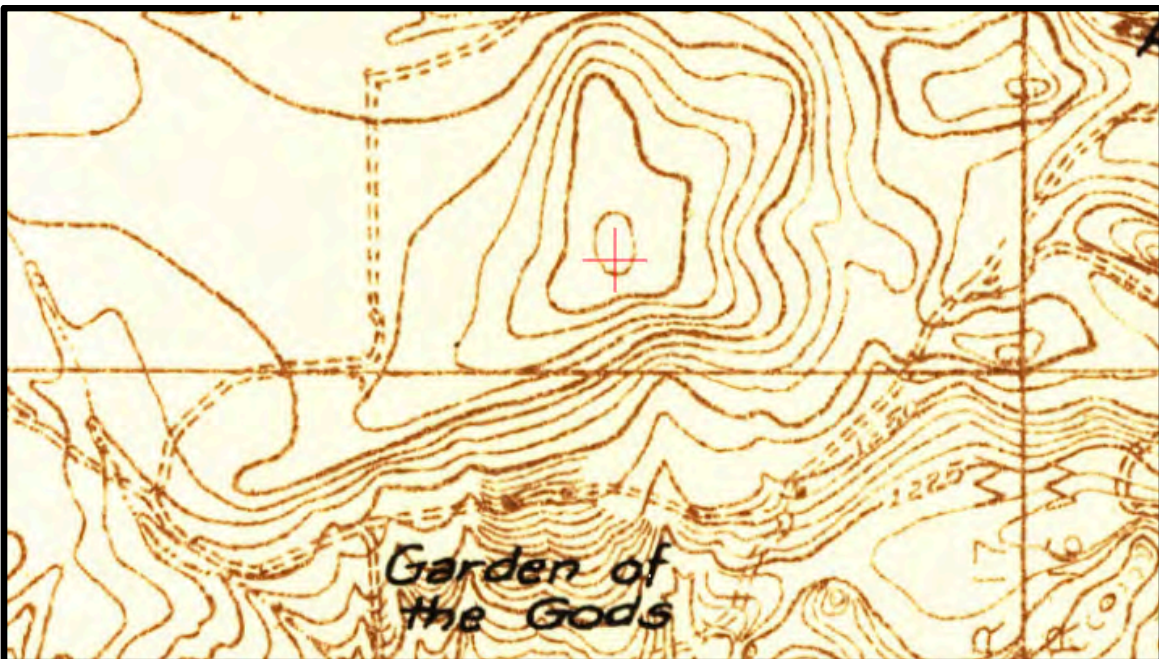
### ***Historical Map Database Search***

Examination of historic maps included fourteen historic USGS maps, dating between 1903 and 1979. The 1903 Camulos USGS maps showed the Project site with no development within the Project area (**Figure 4**). No residences, buildings, or roads are shown in or near the Project development footprint. The first historic map showing local residential development is the 1929 Chatsworth USGS map, which shows development of residential buildings and roads in the local area, but no development within the Project development footprint (**Figure 5**). The oldest aerial photograph in the UCSB Library historic aerial photography database was from 1929 (**Figure 6**). As was found with the USGS maps, this photo shows no development within the Project development footprint but shows development in the local area. The 1952 Oat Mountain USGS map shows more development close to the Project development footprint, but nothing on the hill.





*Figure 4: The 1903 Camulos USGS Map (red cross marks the Project location).*



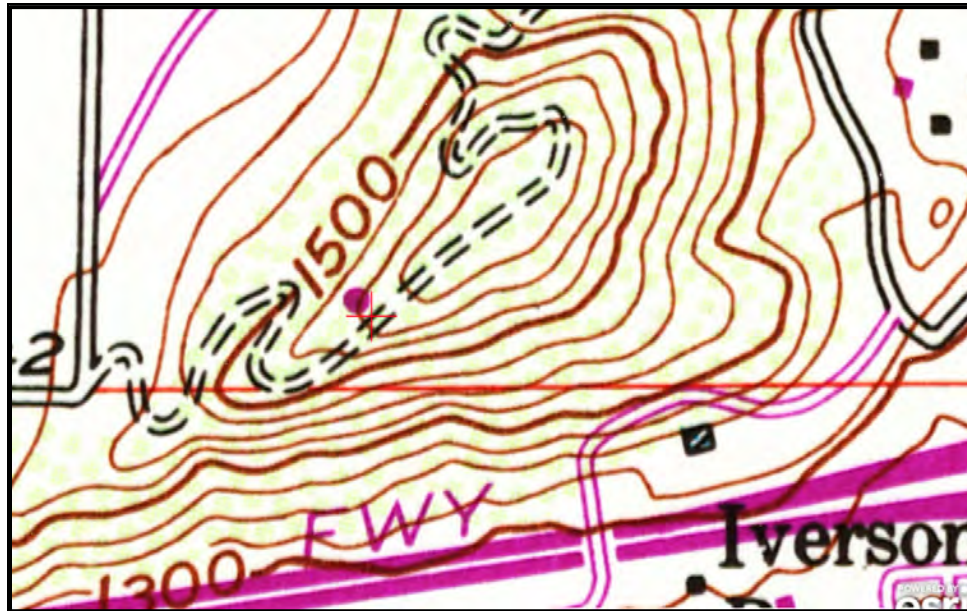
*Figure 5: The 1929 Chatsworth USGS Map (red cross marks the Project location).*



**Figure 6: The Project region a 1929 aerial image, with the Project development footprint being just above center (UCSB Historic Aerial Image Database).**

The smaller of the two water tanks, which is scheduled for replacement, first appeared on the 1969 Oat Mountain USGS Map (Figure 7). It is unknown when the larger of the two tanks was constructed. However, since D'Altroy and Singer observed extensive impacts to the top of the hill in 1978, which can be attributed to the older, smaller water tank and access road, and Foster noted complete impacts in 1981 with no evidence of cultural resource CA-LAN-881, the second water tank was probably constructed between 1978 and 1981, which resulted in the final removal of the cultural resource at that time. Examination of historic Google Earth satellite images shows the local area and developed Project site from 1990 to current, with no changes to the existing water tanks and no additional development.

The review of historic maps, satellite images, and aerial images indicated that the Project development footprint did not contain older historic cultural resources, however, the development of the region took place before World War II (1940s), indicating that the larger region should be considered sensitive for cultural resources. This finding is supported by the 1979 CSUN cultural resource report. The Project development footprint is, therefore, ***negative for older historic resources, but is located within an area that is sensitive for older historic cultural resources.***



*Figure 7: The 1969 Oat Mountain USGS Map, showing a single water tank located in the Project development footprint.*

### *Paleontological Assessment*

Examination of the Dibblee Geological map for the area (Oat Mountain) indicated that the entire project development footprint is within the Chatsworth sandstone formation (**Figure 8**). The Chatsworth Formation dates to the Cretaceous period (145 million years ago to 66 million years ago), and represent a marine environment of that time. Fossils present include mostly marine shells and invertebrates, with rare examples of shark teeth and fish vertebrae. Though not common, important fossils can be uncovered within this Formation.

### *Project Development Footprint Pedestrian Survey*

Envicom staff visited the Project development footprint on October 8, 2019 (**Figure 9**, **Figure 10**, **Figure 11**, and **Figure 12**). The Project development footprint is semi-developed with a circular pavement around the two water tanks. The undeveloped slope area away from the tanks had good visibility, but no signs of prehistoric artifacts that may be related to CA-LAN-881. The slope was extreme in areas, but gentler in other locations around the water tanks. It appeared that much of the hill, even the undeveloped area, had been subject to extensive grading and movement of soils away from the tank pads.

The staging area is not developed other than a dirt road running through the middle (**Figure 13** and **Figure 14**). The staging area also had patchy, dense vegetation with a surface visibility of between 50% and 100%. Surface visibility for both locations was determined to be adequate to provide a general understanding of whether prehistoric or older historic artifacts or features were present on the surface or not. No early historic or prehistoric artifacts or features were observed. The findings were, therefore, *negative for cultural resources within the Project development footprint*.



*Figure 8: The 1981 Oat Mountain USGS Map, showing the project development footprint (center), which is entirely within the Chatsworth Formation (green).*



*Figure 9: Project development footprint showing the Water Tank to be replaced.*



*Figure 10: The Project development footprint, showing the road up to the Water Tank.*



*Figure 11: The Project development footprint, showing steep slope away from the water tanks.*



*Figure 12: A View of the road down to the Staging Area.*



*Figure 13: A View of the Staging Area*



*Figure 14: A View of the Staging Area.*

## **RECOMMENDATIONS**

The results of the SCCIC records search were positive for cultural resources within the Project development footprint, however, the site in question (CA-LAN-881) was determined by past archaeologists to have been first severely impacted, then destroyed by water tank and access road development in the area. These impacts were confirmed by historical map and aerial photograph analysis. The NAHC was also negative for cultural resources within the Project development footprint, as was the pedestrian survey.

However, due to the existence of a previous cultural resource in the Project development footprint, and due to the area being within a region that is sensitive for older historic cultural resources, Envicom recommends that initial grading of the Project area be monitored for cultural resources associated with CA-LAN-881 or with older historic development in the area. Envicom also recommends that, if bedrock is encountered during grading, that the Project should be spot-checked daily by a paleontological monitor.

### ***Recommendation 1: Archaeological and Paleontological Monitoring.***

An archaeological monitor that meets the Secretary of Interior qualifications will be on site during grading of the Project from surface to bedrock. The purpose of having an archaeologist on site is to assess if any significant cultural resources are encountered during grading. If such features are identified, then the “discovery” protocol will be followed. A paleontological monitor will spot-

check the Project daily once bedrock is encountered, until grading ends. If significant fossils are identified, then the “discovery” protocol will be followed.

The archaeological monitor will collect any prehistoric or historic material that is uncovered through grading that is within a disturbed context, and can halt construction within 50-feet of a potentially significant cultural resource if necessary. Artifacts collected from a disturbed context or that do not warrant additional assessment can be collected without the need to halt grading. Discovery situations that do not lead to further assessment, survey, evaluation, or data recovery can be described in the monitor’s daily Monitoring Report. However, if more substantial resources are encountered, then the Project “discovery” protocol should be followed.

Similarly, paleontological monitors can collect fossils that are small or that are from disturbed context, and can halt construction within 50-feet of a potentially significant fossil resource if necessary. Fossils collected from a disturbed context or that do not warrant additional assessment can be collected without the need to halt grading. Discovery situations that do not lead to further assessment, survey, evaluation, or data recovery can be described in the monitor’s daily Monitoring Report. However, if more substantial resources are encountered, then the Project “discovery” protocol should be followed.

A final Project Monitoring Report will be produced that discusses all monitoring activities and all artifacts recovered and features identified through monitoring of the demolition and grading of the Project site. Discovery situations that do not lead to further assessment, survey, evaluation, or data recovery can be described in the Monitoring Report.

All artifacts recovered that are important, with diagnostic or location information that may be of importance to California and Los Angeles City history, will be cleaned, analyzed, and described within the Monitoring Report. All materials will be curated at an appropriate depository. All significant fossils recovered will be deposited with the Natural History Museum of Los Angeles. If important materials are found during monitoring, a Curation Plan will be needed that is reviewed by the Lead Agency prior to the publication of the Monitoring Report. The costs of the Monitoring Report, the Curation Plan, and the processing, analysis, and curation of all artifacts will be the responsibility of the applicant, within the cost parameters outlined under CEQA.

***Recommendation 2: Archaeological and Paleontological Discovery Protocol.***

If potentially significant intact deposits are encountered that are within an undisturbed context, then a cultural resource/fossil “discovery” protocol will be followed. If significant prehistoric, older historic, or fossil materials are recovered in native original context, then all work in that area shall be halted or diverted away from the discovery to a distance of 50-feet until a qualified senior archaeologist or paleontologist can evaluate the nature and/or significance of the find(s). If the senior archaeologist or paleontologist (not the field monitor) confirms that the discovery is potentially significant, then the Lead Agency will be contacted and informed of the discovery.

Construction will not resume in the locality of the discovery until consultation between the senior archaeologist or paleontologist, the owner’s Project manager, the Lead Agency, and all other concerned parties, takes place and reaches a conclusion approved by the Lead Agency. If a



significant resource is discovered during earth-moving, complete avoidance of the find is preferred. However, if the discovery cannot be avoided, further survey work, evaluation tasks, or data recovery of the significant resource may be required by the Lead Agency. The Lead Agency may also require changes to the Monitoring Plan, based on the discovery.

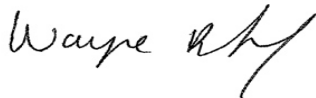
All costs for the additional monitoring, discovery assessment, discovery evaluation, or data recovery of will be the responsibility of the applicant, within the cost parameters outlined under CEQA. All individual reports, including the final Project Monitoring Report, will be submitted to the SCCIC or the NHM at the conclusion of the Project.

***Recommendation 3: Inadvertent Discovery of Human Remains.***

The inadvertent discovery of human remains is always a possibility during ground disturbances; State of California Health and Safety Code Section 7050.5 addresses these findings. This code section states that in the event human remains are uncovered, no further disturbance shall occur until the County Coroner has made a determination as to the origin and disposition of the remains pursuant to California Public Resources Code Section 5097.98. The Coroner must be notified of the find immediately, together with the City and the property owner.

If the human remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials and an appropriate re-internment site. The Lead Agency and a qualified archaeologist shall also establish additional appropriate mitigation measures for further site development, which may include additional archaeological and Native American monitoring or subsurface testing.

Sincerely,



Dr. Wayne Bischoff  
Envicom Director of Cultural Resources

**ATTACHMENTS:**

Appendix A: NAHC Request and Response Letter

Appendix B: Resume of Dr. Wayne Bischoff (author)

**APPENDIX A**  
**NAHC Request and Response Letter**



October 3, 2019

Native American Heritage Commission  
1550 Harbor Boulevard, Room 100  
West Sacramento, CA 95691

**Subj: Cultural Resources Phase I Assessment for Twin Lakes Tank and Pump Station  
Upgrades for Deerlake Track 53138.  
(Envicom Project #49-058-101)**

To Whom it May Concern,

Envicom Corporation (Envicom) is requesting a record review of the Native American Heritage Commission (NAHC) records of cultural resources for the Project site, plus a **0.25-mile study area**. We also request a list of Tribal Group representatives for the area in the event we need to contact their offices. The Project site is located at:

**United States Geological Survey 7.5' Quadrangles: Oat Mountain  
Township: 2 North Range: 17 West  
Latitude: 34°16'44.29"North Longitude: 118°36'44.13"West**

Envicom appreciates the NAHC's help with this request. For correspondence or questions regarding this Project, please contact Wayne Bischoff at 818-879-4700 (wbischoff@envicomcorporation.com).

Sincerely,

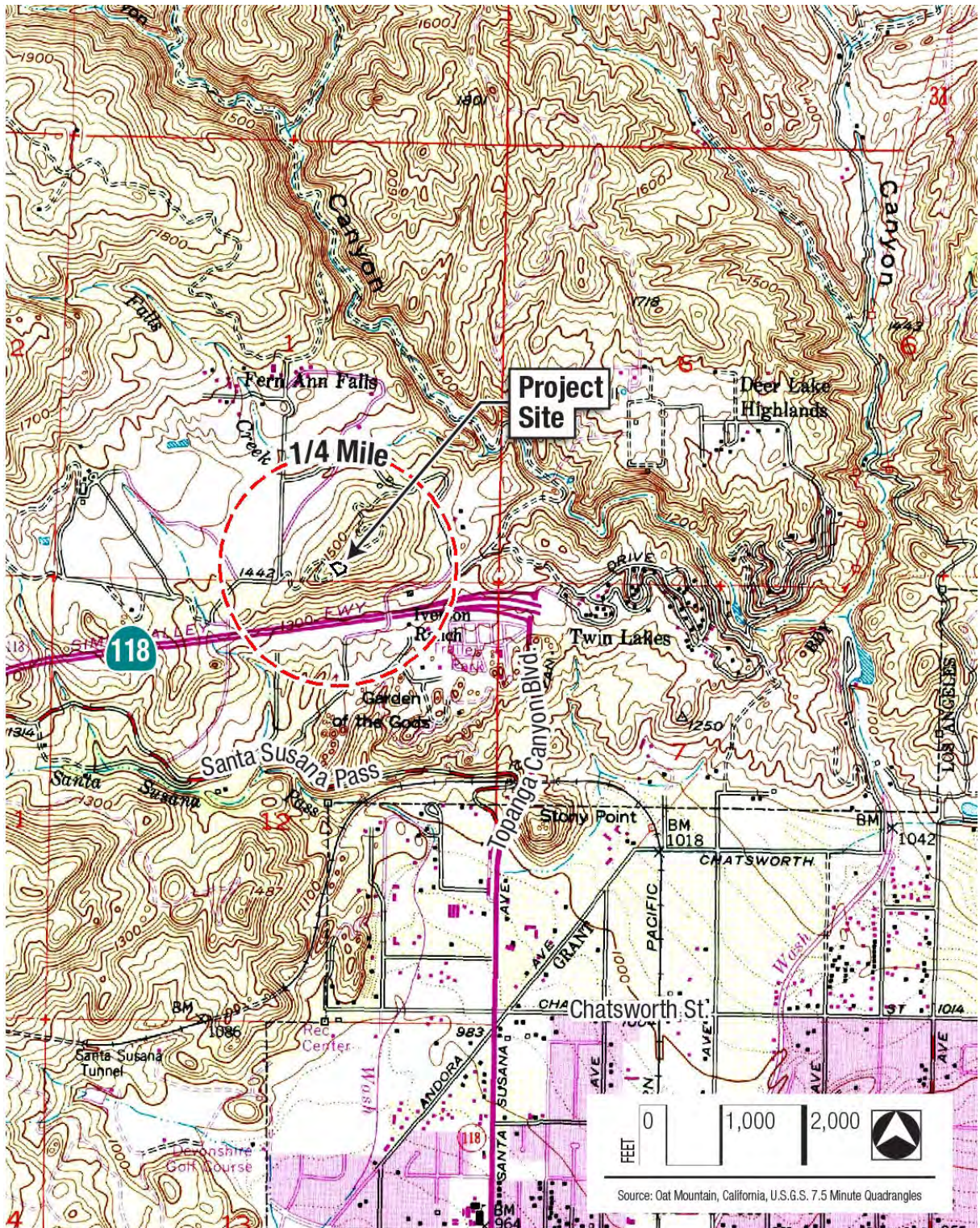
A handwritten signature in blue ink that reads "Wayne Bischoff".

Dr. Wayne Bischoff  
Director of Cultural Resources

**Attachment:**

Project vicinity map on 1:24,000 topographic map





**NATIVE AMERICAN HERITAGE COMMISSION**  
Cultural and Environmental Department  
1550 Harbor Blvd., Suite 100  
West Sacramento, CA 95691 Phone: (916) 373-3710  
Email: [nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
Website: <http://www.nahc.ca.gov>



October 7, 2019

Wayne Bischoff  
Envicom Corporation

VIA Email to: [wbischoff@envicomcorporation.com](mailto:wbischoff@envicomcorporation.com)

RE: Twin Lakes Tank and Pump Station Upgrades for Deerlake Track 53138 Project, Ventura County

Dear Mr. Bischoff:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: [Andrew.Green@nahc.ca.gov](mailto:Andrew.Green@nahc.ca.gov).

Sincerely,

A handwritten signature in blue ink that reads "Andrew Green".

Andrew Green  
Staff Services Analyst

Attachment

**APPENDIX B**

**Resume of Dr. Wayne Bischoff (author)**



**DR. WAYNE BISCHOFF**  
**Director of Cultural Resources**  
*wbischoff@envicomcorporation.com*

**Years of Experience**  
Over 25 years

**Education**  
Ph.D. Anthropology,  
Michigan State University

B.A. Anthropology, Purdue  
University

**Certifications**  
Registry of Professional  
Archaeologists (RPA)

**Professional Affiliations**  
Society of Historical  
Archaeology

Society for California  
Archaeology

Society for American  
Archaeology

**Specialized Training**  
AB-52/Tribal Consultation

Paleontological  
Assessments

Built Environment  
Assessments

Ethnographic Reports

Dr. Bischoff has over 25 years of experience in managing cultural resource projects and ensuring compliance with the California Environmental Quality Act (CEQA), Section 106 of the National Historic Preservation Act (NHPA), the National Environmental Protection Act (NEPA), and state, county, city, and local government cultural laws, guidelines, and procedures. He has managed cultural, paleontological, ethnographic, and built environment projects throughout Southern California, including the Counties of Ventura, Los Angeles, Kern, Imperial, San Diego, Orange, Santa Barbara, Riverside, and San Bernardino. Dr. Bischoff has been the principal or project manager for hundreds of cultural resource projects in Southern California, including record searches, surveys, evaluations, and data recoveries, built environment and historic architectural inventories, HABS projects, paleontological surveys, ethnographic reports and Native American consultation, and historic structure evaluations. Dr. Bischoff has worked with all Tribal Groups of the Greater Los Angeles area and has provided expert consultation, including Assembly Bill (AB) 52 consultation, writing support, and coordination. He has also written, planned, and enforced cultural resource components of many forms of CEQA and NEPA documents and been a part of Memorandum of Agreement (MOA), Memorandum of Understanding (MOU), and Programmatic Agreement (PA) development teams.

Dr. Bischoff's experience includes residential and commercial development, public works, storm and sewer projects, environmental restoration, water resources, energy and transmission line, highway and bridge, telecommunication, educational facility, and park and trail project. Dr. Bischoff has been the principal or project manager for hundreds of cultural projects in California, including Phase I literature searches and surveys, Phase I(b) subsurface surveys, Phase II evaluations, and Phase III data recoveries. He has also completed built environment and standing structure (architectural) inventories, assessments, and historic structure evaluations in select municipalities.

Dr. Bischoff also has extensive experience consulting with state and federal agencies, including the State Historic Preservation Office (SHPO), California Department of Transportation (Caltrans), the Department of Defense, the General Services Agency (GSA), California Department of Parks and Recreation, the U.S. Department of Agriculture (USDA), many U.S. Army Corps of Engineers (ACOE) districts, Fish and Wildlife, the California Public Utilities Commission (CPUC), the National Park Service, the USFS, the NTIA, Federal Highway Administration, and the Port Authorities of several cities.



## **REPRESENTATIVE PROJECT EXPERIENCE**

### ***Phase II Evaluation of the Proposed Location of the Printz Colony House within the Strathearn Historic Park, City of Simi Hills, Ventura County, CA.***

Principal and Project Manager for this Phase II evaluation of part of the 1880s Strathearn Farmstead. Evaluation tasks included the excavation of shovel test pits and a single test unit, construction monitoring, and a combined report for the Rancho Simi Recreation and Parks District

### ***Phase I Survey of 1160 Sulphur Mountain Road, City of Ojai, Ventura County, CA.***

Principal and Project Manager for this residential development project, which included a SCCIC/NAHC record search and a site visit.

### ***Phase I Survey of an Agricultural Development Parcel in Balcom Canyon, City of Somis, Ventura County.***

Principal and Project Manager for this project, which included an SCCIC/NAHC record search, a site visit, and the recordation of a prehistoric site at the edge of the project boundary.

### ***Village at Los Carneros, City of Goleta, Santa Barbara County, CA.***

Reviewed all previous technical studies and wrote part of the cultural sections of the Environmental Impact Report for this residential house development project.

### ***Phase I Survey of the Sherwood Development Corporation, Tract 4409, Ventura County, CA.***

Principal and Project Manager for this Army Corps of Engineers (ACOE) permitting project. Project included a SCCIC/NAHC record search and a site visit, as well as SHPO review.

### ***Phase I Survey of the Conejo Creek Park, City of Thousand Oaks, Ventura County, CA.***

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey.

### ***Phase I Survey of the Butler Ranch, in Ventura County near west Simi Valley, California.***

Principal and Project Manager for the completion of a Phase I record search, NAHC record search request, and a site survey of this 332-acre low density residential development project.

### ***Phase I Survey for the 17-acre Olivas Park Extension commercial development project in Ventura, Ventura County, CA.***

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey, followed by limited monitoring.

### ***11172 Santa Paula Road Phase Ia Survey for a 5.5-acre Agricultural property in Ojai, California, Ventura County, CA.***

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey.

### ***Phase I Survey of the proposed Tapo at Alamo EIR for a mixed-use development project, Simi Valley, Ventura County, CA.***

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey.

### ***Phase I Survey for a single family property development along Yerba Buena Road, Ventura County, CA.***

Principal and Project Manager for the completion of an SCCIC and NAHC record search, and a site survey.



***Phase I Survey for 15498 LaPeyre Court, a residential development in Moorpark, Ventura County.***

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. Project also included coordination with numerous biology tasks.

***Phase I survey for 22866 Beckledge Terrace, Malibu, Unincorporated Los Angeles County***

Principal and Project Manager for the completion of a record search, NAHC record search request, and a site survey.

***Pepperdine University Campus Life Project: Debris Basin Excavation Cultural and Paleontological Resource Monitoring, City of Los Angeles***

Cultural resources principal and project manager for cultural resource monitoring of Phase I of the Pepperdine Campus Life housing, facilities, and trail development project.

***North Canyon Ranch 170-acre Residential Subdivision in Simi Valley, Ventura County, CA.***

Principal and Project Manager for the completion of a SCCIC/NAHC record search and project area site survey. A key issue for this project was a previously disturbed cultural resource within the project area, the destruction of which needed to be addressed in the final report.

***Phase I Survey of Approx. 50-acres, Saddlerock Ranch/Malibu Wines Property in the Santa Monica Mountains, Unincorporated Los Angeles County***

Cultural resources principal and project manager for the completion of a record search, NAHC scoping, and a site survey. This project involves upgrades to the winery existing structures and public buildings, as well as road and parking improvements. Part of this project is located near a National Register Chumash rock art site as well as other prehistoric resources.

***Phase I Survey for the 6625 Bradley Road, a residential development in Somis, Ventura County***

Cultural resources principal and project manager for the completion of a record search, NAHC record search request, and a site survey for this small residential development.

***Marinette Road Residential Development, Pacific Palisades***

Cultural resources principal and project manager for this development project located in Pacific Palisades, which included a record search, site survey, Tribal Group scoping letters, and agency consultation. The major challenge was that the project property was within the Will Rogers State Monument and National Register site boundary.

***West Hills Crest 37-acre Residential Subdivision, City of Los Angeles***

Cultural resources principal and project manager for the completion of a cultural record search and project area site survey. Part of the project, located in the West Hills area, also involved the resurvey of a previously recorded cultural resource within the project boundary. A key issue for this project was the record search being positive for a prehistoric cultural resource within the development area. This resource, CA-LAN-1223, was further investigated with 22 shovel test pits, and evaluated as not being a significant cultural resource.

***Faunal, Osteological, Archaeological, and Fossil for the Hollywood Park Development Project (New Rams National Football League Stadium), City of Inglewood***

Osteological and paleontological consultant for Kiewit, Turner-Hunt, and Citadel for the construction of the new Rams National Football League stadium. The project has included the discovery and recordation of modern and fossil mammal bones.

***Cultural Phase Ia Survey for the Woodland Hills 19-Unit Subdivision Project, City of Los Angeles***

Cultural resources principal and project manager for the completion of a cultural record search, NAHC scoping, and a site survey. This project also involved consultation with the City of Los Angeles on AB 52.



***CA-LAN-320 Phased Evaluation Project, Agoura Hills, Los Angeles County, California***

Principal and Project Manager for the phased evaluation (Phase II) of CA-LAN-320 in response to potential impacts from the construction of the Conrad N. Hilton Foundation Phase 2 Campus Building. The site is a prehistoric Chumash residential and ceremonial center of over 80-acres in size and that was used by prehistoric Native Americans from 300 B.C. to the late 1700s. Dozens of test units, hundreds of shovel test pits, surface collection, and surface feature mapping have been completed to date planned.

***Marina Del Rey Waterline Replacement Project Cultural Monitoring, Los Angeles County Department of Public Works, Unincorporated County Los Angeles***

Cultural resources principal and project manager. This project with the Los Angeles Department of Public Works involved the cultural monitoring for the Marina Del Rey 18-inch Waterline Replacement. Chambers Group also provided a qualified archaeological monitor at the project site during excavation activities during construction.

***Phase I Survey of the Castaic Apartments Project, Town of Castaic, Los Angeles County, CA.***

Principal and Project Manager for this large 105-acre mixed use development project, which included an SCCIC/NAHC record search, an NHM record search, a site visit, and the recordation of two mid-19<sup>th</sup> Century historic sites.

***Penmar Golf Course Water Quality Improvement Project, Pacific Hydrotech, City of Los Angeles***

Cultural resources principal and project manager. Dr. Bischoff managed the review, budgets, and professional standards for the project located in the Venice area adjacent to the City of Santa Monica. Penmar was a multi-year waterline and tank improvement project in which evidence of ethnic Japanese barrios and fossil Pleistocene animal bones were discovered.

***Phase I Survey for the Agoura Kanan Village project, a 7.37-acre Commercial Subdivision in the City of Agoura Hills***

Cultural resources principal and project manager for the completion of a record search, NAHC scoping, and a Phase Ia site survey. The Phase Ia survey was followed by a Phase Ib subsurface survey and an updated site form for a previously known prehistoric cultural resource that includes the entire project area.

***Los Angeles Unified Schools Department (LAUSD) Environmental On-Call (including cultural resources), City of Los Angeles, Los Angeles County, CA.***

Principal, Project Manager, and cultural resource consultant as needed. Envicom was one of 15 companies to be awarded this large on-call contract.

***Southern California Edison (SCE) Tehachapi Renewable Transmission Project (TRTP), Kern, Los Angeles, and San Bernardino Counties***

Cultural field manager. Dr. Bischoff was responsible for all office and field operations that ensured the successful inventory and management of cultural resources related to this 300-mile transmission line project, including the management of standing historical structures and paleontological resources. Dr. Bischoff completed over 150 individual projects in Southern California including survey, evaluation, mitigation, and resource monitoring. He also met legal and agency guidelines for Section 106 of NHPA, CEQA, the Native American Graves Protection and Repatriation Act (NAGPRA), and the TRTP Cultural Resource Management Plan. The Angeles National Forest was the lead federal agency, but the California Public Utilities Commission and other federal and California agencies were also involved.

***Southern California Edison Operations and Maintenance Contract, Southern California***

Cultural field manager for all work orders issued under the operations/maintenance contract. A major task under this contract was the response to the Crown Fire in 2010. Dr. Bischoff worked directly with SCE during and immediately after the fire to evaluate and protect cultural resources.



## **APPENDIX D**

### **Construction Traffic Noise and Vibration**



# MEMORANDUM

**Date:** June 26, 2020

**To:** Las Virgenes Municipal Water District

**From:** Envicom Corporation, CEQA Environmental Consultants

**Subj:** Evaluation of Construction Traffic Noise and Vibration for Twin Lakes Water Storage Tank And Pump Station Upgrades

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This evaluation was prepared to augment the Administrative Draft Initial Study and Mitigated Negative Declaration (“IS/MND”) for the Twin Lakes Water Storage Tank and Pump Station Upgrades (“Project”) in unincorporated Los Angeles County to address temporary noise and vibration effects of construction traffic along residential area roadways in the vicinity of the water tank site.

## I. PROJECT DESCRIPTION

The Project would remove an existing 400,000-gallon water storage tank and construct a 1,000,000-gallon water tank on the same site. During construction activities, trucks would carry equipment and materials to and from the water tank site, which is accessed from a residential area. The specified haul route from the site to the nearest freeway ramps will extend south along Iverson Road from the water tank site into the City of Los Angeles, to Santa Susana Pass Road, then east to Topanga Canyon Road, and north to the State Route 118 access ramps. The project would include grading to reduce the elevation of the pad on which the existing tank is constructed on by approximately six feet and expand the area of the graded pad to accommodate the larger diameter footprint of the new tank, resulting in an estimated 3,000 cubic yards of soil material to be exported from the site along the specified haul route to the freeway as described above, and then on to a disposal site in Irwindale. The project would use dump trucks with capacities of approximately fourteen (14) cubic yards each for exporting soil materials from the site, resulting in approximately 214 truckloads of soil to be transported, for a total of about 428 one-way trips including the return of empty trucks for refilling. The soil export hauling activities would occur over a four (4) day duration, which would average 108 trips per day (in an 8-hour workday) for hauling soil export material. While other construction activity phases would also require truck deliveries of equipment and materials, this noise and vibration analysis will focus on effects resulting from the four (4) day soil export hauling phase, as this would be the period with the highest amount of truck traffic generated by the project.



## II. THRESHOLDS OF SIGNIFICANCE

### Noise

Section 12.08.440 of the County Code of Ordinances prohibits construction that would create a noise disturbance across a residential or commercial real-property line from 7:00 p.m. to 7:00 a.m. weekdays and at any time on Sundays or holidays. This section also establishes maximum construction noise levels at various receiving land uses. During the specified daytime weekday hours, the maximum hourly noise level for single-family residences is 75 dB Leq for mobile equipment and for stationary equipment the maximum noise hourly level is 60 dB Leq.

While the project is within the County of Los Angeles, the proposed haul route would also travel through the City of Los Angeles. The City of Los Angeles Municipal Code (LAMC) Section 41.40(a) and (c) restricts construction activity to the hours below:

- Monday through Friday between 7:00 a.m. to 9:00 p.m.
- Saturdays and National Holidays between 8:00 a.m. to 6:00 p.m.
- Sundays, no construction except for individual residents.

LAMC Section 112.05 limits the maximum noise level of powered equipment or powered hand tools (e.g., construction equipment, including off-highway trucks). According to LAMC Section 112.05, any powered equipment or hand tool that produces a maximum noise level exceeding 75 dBA within 500 feet of a residential zone, when measured at a distance of 50 feet from the source, is prohibited unless compliance is technically infeasible.

### Vibration

Because vibration is typically not an issue, very few jurisdictions have adopted vibration significance thresholds. Vibration thresholds have been adopted for major public works construction projects, but these relate mostly to structural protection (cracking foundations or stucco) rather than to human annoyance. A vibration descriptor commonly used to determine structural damage is the peak particle velocity (PPV) which is defined as the maximum instantaneous positive or negative peak of the vibration signal, usually measured in inches per second (in/sec). The Caltrans criteria for potential structural vibration damage due to intermittent events for modern structures is 0.5 PPV in/sec, and for older residential structures is 0.3 PPV in/sec.<sup>1</sup> Below this level there is virtually no risk of building damage. According to the Caltrans criteria for vibration annoyance potential, groundborne vibration from intermittent sources would be barely perceptible to humans at 0.01 PPV in/sec, distinctly perceptible at 0.04 PPV in/sec, and strongly perceptible at 0.1 PPV in/sec.<sup>2</sup>

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<sup>1</sup> Caltrans, Transportation and Construction Vibration Guidance Manual, April 2020.

<sup>2</sup> Ibid.

### III. EXISTING CONDITIONS

#### Existing Sensitive Land Uses

The closest existing noise sensitive land use to any segment of the haul route is a single-family residence at 11470 Iverson Road, due to its proximity to the unpaved access road between Iverson Road and the Twin Lakes water tank site, designated R-1 for this evaluation. Other nearby single-family residences located along Iverson Road in unincorporated County of Los Angeles are represented by R-2. Within the City of Los Angeles, receptors along the haul route include multifamily residences (R-3) along Santa Susana Pass Road, a single-family residence on Old Santa Susana Pass Road (R-4), and the Indian Hills Mobile Home Village (R-5) on Topanga Canyon Road. These noise sensitive land uses in the vicinity of the haul route are listed in **Table 1, Noise-Sensitive Receptors**.

**Table 1**  
**Noise-Sensitive Receptors**

Number	Land Use	Location	Jurisdiction
R-1	Single-Family Residence	11470 Iverson Road	County of Los Angeles
R-2	Single-Family Residences	Iverson Road	County of Los Angeles
R-3	Multi-Family Residences	Santa Susana Pass Road	City of Los Angeles
R-4	Single-Family Residence	Old Santa Susana Pass Road	City of Los Angeles
R-5	Mobile Home Park	Topanga Canyon Road	City of Los Angeles
Source: Envicom Corporation, Google Earth.			

#### Existing Noise Conditions

The primary source of noise in the vicinity of the proposed truck-hauling route is transportation noise from traffic on State Route 118 and Topanga Canyon Road, and freight and passenger trains. Land uses along the route also experience intermittent high noise levels associated with landscaping equipment such as lawnmowers and leaf blowers, garbage pickup, and street cleaning. Section 111.03 of the LAMC establishes presumed ambient noise levels as a function of zoning and times of day. The presumed ambient daytime (7:00 a.m. to 10:00 p.m.) noise level for residential zones is 50 dBA Leq. The County does not establish presumed ambient noise levels.

#### Existing Vibration Conditions

Freight and passenger rail is an existing source of vibration along some of the haul route, primarily in the vicinity of R-4. In contrast, on-road vehicles are unlikely to generate perceptible groundborne vibration when traveling on smooth roadways, but when pavement discontinuities are present, heavy trucks can create localized vibration peaks.<sup>3</sup> Buses and trucks rarely create vibration that exceeds 70 vibration decibels (VdB), approximately 0.013 PPV in/sec, unless there are bumps due to frequent potholes in the road.<sup>4</sup> Most complaints about vibration from buses and

<sup>3</sup> Ibid.

<sup>4</sup> Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.

trucks are due to the rattling of windows or items affixed to walls, which is usually the result of airborne noise rather than groundborne vibration.<sup>5</sup> Therefore, it is unlikely that existing traffic causes substantial groundborne vibration levels in the project site vicinity due to the paved condition of the roadways.

#### **IV. IMPACT ANALYSIS**

##### **Noise**

During the project's soil export hauling, 214 truck loads would result in a total of 428 truck trips (including the return of empty trucks to the site) to occur over four (4) days, which would average 108 trips per day or approximately 14 trips per hour, rounded up (assuming an 8-hour workday). The hourly Leq from these dump truck trips on various roadways along the haul route was modeled using the Federal Highway Administration Traffic Noise Model 2.5 (FHWA TNM 2.5). Model inputs included hourly vehicle volumes, types, speeds, and receptor distances. Vehicle speeds were based on the posted limits for roadways.<sup>6</sup> Noise reductions from topography or shielding by walls or buildings were not taken into account.

At the closest residence, represented by R-1, which is adjacent to where the dirt road access to the water tank intersects Iverson Road, noise levels from truck hauling would be 63.8 dBA Leq. At the remaining residences along the haul route on Iverson Road, represented by R-2, the temporary truck hauling would generate noise levels up to 52.7 dBA Leq. These noise levels would be below the County's construction noise standard for mobile equipment of 75 dBA Leq. Within the City of Los Angeles, noise levels from truck hauling at a distance of 50 feet from the centerline of the outermost lane would reach 56.1 dBA Leq along Santa Susana Pass Road, in the vicinity of R-3 and R4 and 54.0 dBA Leq along Topanga Canyon Road, in the vicinity of R-5. These noise levels would be below the LAMC construction noise standard of 75 dBA at a distance of 50 feet from the equipment. In addition, project-related noise from truck hauling on Topanga Canyon Road and State Route 118 would be eclipsed by existing traffic noise on these roadways. The noise levels from truck hauling during the grading phase represent the worst case for construction traffic noise and all other phases of construction would generate substantially lower construction traffic noise levels from small numbers of worker trips, demolition debris hauling, and material deliveries.

The project would comply with the specified hours of construction in the County Code of Ordinances and the LAMC. Because noise levels from construction traffic would not exceed the noise limits from the County Code of Ordinances and the LAMC, and because construction traffic would occur within their respective specified construction hours, construction traffic noise impacts would be less than significant and no mitigation measures would be required.

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<sup>5</sup> Ibid.

<sup>6</sup> For the unpaved access road from Iverson Road to the project site, a haul truck speed of five miles per hour was used for the noise model input.

### Vibration

Construction activities generate groundborne vibration when heavy equipment travels over unpaved surfaces or engages in soil movement; however, groundborne vibration levels are dampened substantially over a relatively short distance. A small portion of the project's haul route would be on the unpaved access road between the water tank site and Iverson Road. The reference vibration levels for construction equipment on unpaved surfaces at 25 feet between the source and receptor from the FTA Noise and Vibration Impact Assessment Manual may be used in the following formula to calculate PPV for other distances.<sup>7</sup>

$$PPV_{\text{equipment}} = PPV_{\text{ref}} * (25/D)^{1.5}$$

Where:

*PPV<sub>equipment</sub>* = peak particle velocity (PPV) in inches/second (in/sec) of the equipment adjusted for distance

*PPV<sub>ref</sub>* = reference vibration level in PPV in in/sec at 25 feet

*D* = distance from the equipment to the receiver

Loaded trucks on unpaved roadways would generate vibration levels of 0.076 PPV in/sec at 25 feet. The nearest residence to the haul route is approximately 25 feet from the closest edge of the unpaved site access roadway, and therefore the project's temporary construction hauling activities would generate vibration levels of approximately 0.076 PPV in/sec at this nearest receptor. Two (2) other residences are located approximately 120 feet and 140 feet from the edge of the unpaved site access roadway, and therefore the project's temporary construction-hauling activities would generate vibration levels of approximately 0.007 PPV in/sec and 0.006 PPV in/sec, respectively, at these residences. These vibration levels of 0.076 PPV in/sec, 0.007 PPV in/sec and 0.006 PPV in/sec would not exceed the damage criteria of 0.5 in/sec for newer residential structures and 0.3 in/sec for older residential structures. All other existing residences are located at further distances from the unpaved portion of the haul route, and thus do not warrant further evaluation in terms of vibration levels associated with hauling materials on the unpaved access road to the water tank site.

In terms of human annoyance from vibrations, the project's temporary hauling activity vibration level of 0.076 PPV in/sec at the nearest residence would be between the 0.04 PPV in/sec level at which vibrations are considered distinctly perceptible and the 0.1 PPV in/sec level at which vibrations are considered strongly perceptible. According to the FTA, a 50 percent reduction in vehicle speeds would decrease vibration levels by approximately 4 to 6 VdB, which would be equivalent to an approximate 37 percent to 50 percent reduction in PPV in/sec.<sup>8</sup> **Mitigation Measure NOI-1**, has been identified to limit the speed of haul trucks along the unpaved access road between Iverson Road and the water tank to five miles per hour (mph) in the vicinity of nearby residences, in order to reduce vibrations to levels that would avoid potential temporary annoyance impacts. As these temporary vibration effects would not result in potential structural damage, would only occur during weekday daytime hours, would primarily be associated with soil hauling activities scheduled to occur for only four (4) days, would be substantially below

<sup>7</sup> Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.

<sup>8</sup> Ibid.



strongly perceptible levels, and would be further reduced by implementation of Mitigation Measure NOI-1, the project's potential to result in substantial vibration impacts at the nearest receptor would be less than significant.

As stated above, the project's hauling activity vibration level at the second closest residences to the unpaved portion of the haul route would be 0.007 PPV in/sec and 0.006 PPV in/sec, which would be far below the 0.01 PPV in/sec level at which vibrations are considered to be barely perceptible. Thus, the project's temporary construction hauling vibration effects at those two (2) residences, or any other residences at greater distances from the unpaved access road, would not likely be perceptible, and would be less than significant.

The remainder of the haul route consists of paved roads that appear to be maintained in generally good condition. Existing residences along the paved portion of the haul route, including Iverson Road, are setback approximately 50 feet from the roadway centerline or greater. As discussed above, trucks traveling on smooth, paved roadways would not generate vibrations exceeding 0.013 PPV in/sec. Therefore, the project's construction hauling would not generate vibrations that would exceed the potential for structural damage criteria of 0.5 PPV in/sec for newer residential structures and 0.3 PPV in/sec for older residential structures along the paved portion of the haul route. Additionally, as all residences along the paved portion of the haul route are located at least 50 feet or greater from the roadway centerlines, and the project's potential vibrations from construction hauling on paved roads would not exceed the 0.04 PPV in/sec level considered to be distinctly perceptible at existing residences. Therefore, vibration impacts from truck hauling would be less than significant and no mitigation measures would be required.

## VII. MITIGATION MEASURES

**NOI-1 Reduced Haul Truck Speeds on Unpaved Roads.** During construction activities, haul trucks traveling along the unpaved access road between Iverson Road and the Twin Lakes water tank site shall reduce speeds to 5 miles per hour in the vicinity of residences (within approximately 50 feet) to reduce vibration levels experienced at residences. Temporary signage shall be placed along the affected access road segment indicating the appropriate speed limitation.

Mitigation Plan Requirements and Timing. During project construction activities.

Monitoring. The Las Virgenes Municipal Water District as lead agency shall ensure compliance with this requirement.

## VI. CONCLUSION

As shown above, the Project's temporary construction traffic noise or vibration impacts would be less than significant, or less than significant with the implementation of the identified mitigation measure, respectively.

## **APPENDIX E**

### **Construction Traffic Analysis**



# ASSOCIATED TRANSPORTATION ENGINEERS

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## ***TRAFFIC ANALYSIS FOR THE TWIN LAKES WATER TANK CONSTRUCTION PROJECT, SAN FERNANDO VALLEY***

Associated Transportation Engineers (ATE) is providing the following traffic analysis for the Twin Lakes Water Tank Construction Project (the "Project") proposed in San Fernando Valley area of unincorporated Los Angeles County. The traffic analysis evaluates potential traffic impacts during the construction phase of the Project.

### **PROJECT DESCRIPTION**

The Project is proposing to demolish one of two existing water tanks owned by the Las Virgenes Municipal Water District and replace it with one larger tank. The tanks are located within a gated residential community and are accessed via a connection to Iverson Road. Table 1 lists the construction phases and the number of workers and trucks per day for each phase. Figure 1 illustrates the designated traffic route for employee commute trips, trucks hauling construction materials to the site, and trucks transporting waste materials from the site.

**Table 1  
Construction Summary**

Phase	Duration	Workers per Day	Truck Traffic
1. Demolition	1 Week	5 Workers	15 Loads Disposal
2. Grading & Hauling	4 Days	3 Workers	215 Loads Disposal
3. Fine Grading	3 Days	3 Workers	1 Water Truck
4. Foundation	10 to 12 Weeks	6 Workers	10-15 Loads Concrete
5. Tank Fabrication & Installation	7 to 11 Weeks	6 Workers	NA
6. Field Coatings	4 to 6 Weeks	4 Workers	NA

As shown in Table 1, Project would be constructed in 6 phases over approximately 23 to 31 weeks.

## EXISTING TRAFFIC OPERATIONS

As shown on Figure 1, regional access to the Project site is provided by the SR 118 freeway. Construction traffic would exit SR 118 at the SR 27 (Topanga Canyon Boulevard) interchange, proceed south on Topanga Canyon boulevard to Santa Susana Pass Road, proceed west on Santa Susana Pass Road to Iverson Road, and then proceed north on Iverson Road to the access road that leads to the Project site. The same route would be used in reverse for traffic leaving the Project site.

"Levels of Service" (LOS) A through F are used to rate intersection operations, with LOS A indicating very good operation and LOS F indicating poor operation. Table 2 provides brief definitions for the level of service grading system.

**Table 2**  
**Level of Service Definitions**

LOS	Definition
A	Conditions of free unobstructed flow, no delay.
B	Conditions of stable flow, very little delay.
C	Conditions of stable flow, delays are low to moderate.
D	Conditions approaching unstable flow, delays are moderate to heavy.
E	Conditions of unstable flow, delays are significant.
F	Conditions of forced flow, travel speeds are low and volumes are well above capacity.

Source: Highway Capacity Manual, 2016.

The proposed traffic route was field reviewed to assess existing traffic flows and constraints. The segment of Topanga Canyon Boulevard between SR 118 and Santa Susana Pass is a 4-lane arterial road. Field review found that this segment of the traffic route is heavily used during the AM and PM peak commuter periods. The segment of Santa Susana Pass Road between Topanga Canyon Boulevard and Iverson Road is a 2-lane arterial road. The field review found that this segment of the traffic route carries low volumes at operates at LOS A. Iverson Road is a 2-lane collector road between Santa Susana Pass Road the Project site. The field review found this segment of the traffic route carries low volumes at operates at LOS A. There is a gate that controls access to the private residential community where the Project site is located. Direct access to the Project is provided by the District's private road connection to Iverson Road approximately 1,300 feet north of the access gate. Traffic volumes within the private community are low and traffic flows at LOS A.

**TRIP GENERATION**

Trip generation estimates were developed for each construction phase based on the anticipated number of construction workers and truck traffic. Table 3 presents the trip generation forecasts for each construction phase.

**Table 3  
Trip Generation – Project Construction**

Construction Phase	Number per Day	Shift Schedule	Trip Generation		
			ADT	AM Peak	PM Peak
<b>Demolition</b>					
Workers(a)	5	7:00 AM - 6:00 PM	10	5	5
Trucks(b)	3	NA	<u>6</u>	<u>0</u>	<u>0</u>
Totals:			16	5	5
<b>Grading &amp; Hauling</b>					
Workers(a)	3	7:00 AM - 6:00 PM	6	3	3
Trucks(b)	54	NA	<u>108</u>	<u>11</u>	<u>11</u>
Totals:			114	14	14
<b>Fine Grading</b>					
Workers(a)	3	7:00 AM - 6:00 PM	6	3	3
Trucks(b)	1	NA	<u>2</u>	<u>0</u>	<u>0</u>
Totals:			8	3	3
<b>Foundation</b>					
Workers(a)	6	7:00 AM - 6:00 PM	12	6	6
Trucks(c)	5	NA	<u>10</u>	<u>0</u>	<u>0</u>
Totals:			22	6	6
<b>Tank Fab &amp; Installation</b>					
Workers(a)	6	7:00 AM - 6:00 PM	12	6	6
Trucks(b)	0	NA	<u>0</u>	<u>0</u>	<u>0</u>
Totals:			12	6	6
<b>Field Coatings</b>					
Workers(a)	4	7:00 AM - 6:00 PM	8	4	4
Trucks(b)	0	NA	<u>0</u>	<u>0</u>	<u>0</u>
Totals:			8	4	4

(a) ADT assumes 1 inbound + 1 outbound trip per worker. Peak hour trips assume 7 AM-6 PM worker shifts.

(b) ADT assuming 1 inbound + 1 outbound trip per truck. Peak hour trips assume 10% of trips occur during the AM peak hour and 10% during the PM peak hour.

(c) Trip generation assumes delivery of concrete by 15 trucks over a 3-day period during the foundation phase.

As shown in Table 3, the various construction phases are forecast to generate between 8 and 114 average daily trips (ADT), with the highest volume of traffic generated during the Grading & Hauling phase. This phase, which is anticipated to take 4 days, includes removal and hauling about 3,000 CY of waste material from the Project site to a landfill east of the SR 118/SR 27 interchange. The other phases of construction project would generate less traffic (8 to 22 ADT).

## POTENTIAL TRAFFIC IMPACTS

Given the short duration of the construction project and the minor amount of traffic that would be generated on a day-to-day basis (8 to 114 ADT), the Project would not significantly impact traffic flows along the proposed traffic route.

## SITE ACCESS



The access road the leads to the tank site connects to Iverson Road approximately 1,300 feet north of the entry gate that controls access to the private residential neighborhood. Vehicles entering the Project site are required to climb the rolled curb that runs along the east side of Iverson Road. It is recommended that a physical transition be installed at the entry so that trucks and construction vehicles entering/exiting the site minimize damage to the raised curb.

Sight distances were measured at the driveway to determine if the sight lines along Iverson Road are sufficient in length to permit drivers to anticipate and avoid potential collisions when turning from the Project site. The Caltrans Highway Design Manual sight distance standards were used to determine minimum sight distance requirements at the private driveway.<sup>1</sup> Iverson Road is posted with a speed limit of 25 MPH. Based on Caltrans criteria, the minimum stopping sight distance standard for a 25 MPH design speed is 150 feet.

Sight distances were measured from the driveway looking north and south along Iverson Road. The sight distance looking to the north was measured at about 375 feet to the La Quilla Drive intersection. The sight distance looking to the south was measured at about 735 feet to a horizontal curve in the roadway (see Figure 2). The results show that the sight distances exceed the Caltrans 150-foot minimum sight distance standard.

On-street parking is allowed along this segment of Iverson Road. However, the on-street parking is seldom used since the residential units within the community are located on large lots with ample parking. It is recommended that temporary No Parking signs be placed north and south of the access driveway to ensure that adequate sight distances are provided for vehicles exiting the site.

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<sup>1</sup> Highway Design Manual, California Department of Transportation, Sixth Edition, Updated May 2012.

## RECOMMENDED MITIGATIONS

The following measures should be considered in order to minimize potential traffic impacts associated with the construction project.

1. Adhere to Los Angeles County traffic control procedures and measures for temporary construction projects, including obtaining a permit if required.
2. Where possible, schedule trucks outside of the AM and PM peak commuter periods along the traffic route between SR 118 and the Project site.
3. Install physical transition at the Project's entry driveway so that trucks and construction vehicles entering/exiting the site minimize damage to the raised curb.
4. Perform pre-construction and post-construction inspection of the raised curb located along the east side of Iverson Road at the Project's access driveway. Repair any damage caused by construction traffic.
5. Install temporary No Parking signs on Iverson Road north and south of the access driveway to ensure that adequate sight distances are maintained.

This concludes our traffic analysis for the Twin Lakes Water Tank Construction Project proposed in San Fernando Valley area of Los Angeles.

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SAS/DLD

Attachments: Figure 1 – Construction Traffic Route  
Figure 2 – Driveway Sight Distances



CONSTRUCTION TRAFFIC ROUTE

FIGURE 1





Looking South



Looking North

