

Draft

CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT

Initial Study/Mitigated Negative Declaration

Prepared for
Sweetwater Authority

January 2021



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TABLE OF CONTENTS

Central-Wheeler Tank and System Improvements Project Initial Study / Mitigated Negative Declaration

| | Page |
|--------------------------------------------------|----------|
| SECTION 1, Project Description..... | 1 |
| 1.1 Introduction | 1 |
| 1.2 Project Background..... | 1 |
| 1.3 Project Location | 2 |
| 1.4 Project Purpose and Objectives | 2 |
| 1.5 Project Description | 5 |
| 1.5.1 Central-Wheeler Tank..... | 5 |
| 1.5.2 Water Transmission Mains | 5 |
| 1.6 Project Construction..... | 6 |
| 1.6.1 Central-Wheeler Tank..... | 6 |
| 1.6.2 Water Mains | 6 |
| 1.6.3 Construction Staging and Access..... | 7 |
| 1.7 Project Operation and Maintenance | 7 |
| 1.8 Permits and Approvals..... | 8 |
| ENVIRONMENTAL CHECKLIST..... | 9 |
| Initial Study..... | 9 |
| Environmental Factors Potentially Affected | 11 |
| Environmental Checklist..... | 12 |
| Aesthetics..... | 12 |
| Agriculture and Forestry Resources | 23 |
| Air Quality..... | 24 |
| Biological Resources | 28 |
| Cultural Resources..... | 34 |
| Energy | 37 |
| Geology and Soils..... | 43 |
| Greenhouse Gas Emissions | 47 |
| Hydrology and Water Quality..... | 52 |
| Land Use and Planning..... | 56 |
| Mineral Resources | 57 |
| Noise | 58 |
| Population and Housing..... | 62 |
| Public Services..... | 63 |
| Recreation..... | 64 |
| Transportation | 68 |
| Tribal Cultural Resources | 71 |
| Utilities and Service Systems | 73 |
| Wildfire | 76 |
| Mandatory Findings of Significance..... | 78 |

List of Figures

| | | |
|-----------|---------------------------------------------------------------------------------------------|----|
| Figure 1 | Project Location | 3 |
| Figure 2 | Project Components | 4 |
| Figure 3 | Photo Location Map | 15 |
| Figure 4 | Existing and Simulated View from Sweetwater Summit Regional Park looking southeast | 16 |
| Figure 5 | Existing and Simulated from Summit Meadows Road looking Northeast | 17 |
| Figure 6 | Existing and Simulated from Summit Meadows Road looking North | 18 |
| Figure 7 | Existing and Simulated from Summit Park looking north | 19 |
| Figure 8 | Existing and Simulated from Fish Program looking southwest | 20 |
| Figure 9 | Existing and Simulated from Sweetwater Dam Access Road looking south..... | 21 |
| Figure 10 | Existing and Simulated from north shore of Sweetwater reservoir looking south..... | 22 |
| Figure 11 | Existing Trail and Proposed Hiking Trail Realignment | 65 |

List of Tables

| | | |
|---------|--------------------------------------------------------------------------------|----|
| Table 1 | Regulatory Requirements and Authorizations | 8 |
| Table 2 | Proposed Project Unmitigated Emissions lbs per day..... | 25 |
| Table 3 | Impacts and Mitigation for Vegetation Communities and Land Cover Types..... | 31 |
| Table 4 | Summary of Energy Consumption During Project Construction | 38 |
| Table 5 | Project Operational Energy Usage and Regional Energy Supply | 40 |
| Table 6 | Proposed Project Unmitigated GHG Emissions (MT/yr CO ₂ e)..... | 48 |
| Table 7 | Typical Noise Levels from Construction Equipment..... | 58 |

Appendices

| | |
|------------|----------------------------------------------------------------|
| Appendix A | Central Wheeler Tank Construction Emissions Modeling Output |
| Appendix B | Biological Resources Letter and Focused Species Survey Reports |
| Appendix C | Cultural Resources Report |
| Appendix D | Energy Calculations |
| Appendix E | Noise Calculations |
| Appendix F | Transportation Impact Analysis |

SECTION 1

Project Description

1.1 Introduction

Sweetwater Authority (Authority), as the Lead Agency pursuant to the California Environmental Quality Act (CEQA), is proposing to construct the Central-Wheeler Tank and System Improvements Project (proposed Project) to improve reliability of water distribution within the Wheeler Pressure Zone and a portion currently served by the Gravity Pressure Zone. The proposed Project would involve the construction and operation of an 0.8 Million Gallon (MG) welded-steel water tank (Central-Wheeler Tank or CWT) and construction of associated water drainage and conveyance pipelines.

Founded in 1977, the Authority is a public water agency located in San Diego County that currently provides water service to approximately 190,000 people in its 36-square-mile service area that comprises National City, western Chula Vista, and the unincorporated areas of Lincoln Acres, Bonita, Lynwood Hills and Sunnyside. The Authority owns and operates the Sweetwater Reservoir and Loveland Reservoir as well as the 30-million-gallon-per-day (MGD) Robert A. Perdue Water Treatment Plant in Spring Valley; the 10 MGD Richard A. Reynolds Groundwater Desalination Facility in Chula Vista; the 2 MGD National City Wells in National City; and a water distribution system within its service area.

1.2 Project Background

In its 2015 Water Distribution System Master Plan (2015 Master Plan), the Authority evaluated the transmission, pumping, storage and distribution network, and made recommendations to meet anticipated demands through the year 2040. Through the modeling of zone-specific water demands, and the analysis and establishment of demand peaking factors, various components of the existing water distribution system were identified as deficient and recommended for improvements. The existing Wheeler Tank, located in Bonita, is the only tank in the Wheeler Pressure Zone; it is significantly smaller than the storage volume recommended for that specific area and it's in need of repairs. The existing tank, constructed in 1952, has an operating storage capacity of 0.36 MG, however, the tank does not meet structural stability requirements for seismic activity, and is therefore operated at a reduced capacity of 0.25 MG. The existing tank is unable to meet daily storage requirements for maximum day demands and fire flow demands. As described in the 2015 Master Plan, the current requirements to satisfy daily water demands in the Wheeler Pressure Zone is 0.60 MGD and the projected demand is 0.84 MGD by 2040. The 2015 Master Plan identified pressure and water demand issues, including storage for fire protection,

and recommended constructing a 0.8 MG tank and an expansion of the Wheeler Pressure Zone to include those parcels fed by gravity in the vicinity of San Miguel Road. Upon completion of the proposed Project, the pressure zone would be referred to as the Central-Wheeler Pressure Zone and include both the existing Wheeler Tank and the proposed Central-Wheeler Tank. After project completion, the existing Wheeler Tank could be evaluated for upgrades to meet structural stability requirements for seismic activity, but any potential future upgrades are not part of this project. The Authority would be able to meet storage requirements for maximum day and fire flow demands while operating the existing Wheeler Tank at a reduced capacity of 0.25 MG and operating the new CWT to its maximum capacity of 0.8 MG.

Prior to the planning of the current project, the Authority in 2001-2002 began designing the CWT. The original tank was designed to be located north of the current proposed location, adjacent to the Community Center that has since been constructed at Summit Park. The Authority and the County of San Diego (COSD) had conversations and ultimately came to the conclusion the tank at the original proposed location would result in significant visual/aesthetics issues for individuals using the Community Center and park. Since the Authority is unable to meet daily storage requirements for maximum day demands and fire flow demands in the Wheeler Pressure Zone, the Authority began looking for a new location for the tank. In 2014, the Authority conducted a visual analysis, including installation of story poles at both the original site and the currently proposed site. After further coordination with the COSD, the Authority decided to relocate the tank to the location discussed herein to minimize visual impacts to Community Center and park visitors and users.

1.3 Project Location

The proposed Project is located near the unincorporated community of Sunnyside in San Diego County, California, just east of the unincorporated community of Bonita, approximately 9 miles east from downtown San Diego, and 6 miles northeast of downtown Chula Vista (**Figure 1**). The closest highway to the proposed Project site is State Route (SR) 125. The Sweetwater Summit Regional Park, Sweetwater Reservoir, Sweetwater Reservoir's Fishing Program, and a trail system are adjacent to or in the vicinity of the proposed Project. The CWT would be installed within Sweetwater Reservoir property, approximately 1,260 feet northwest of the intersection of San Miguel Road and Summit Meadow Road (**Figure 2**). The Sweetwater Summit Regional Park, Sweetwater Reservoir, Sweetwater Reservoir's Fishing Program, and a trail system within Sweetwater Reservoir property can be accessed from this intersection.

1.4 Project Purpose and Objectives

The purpose of the proposed Project is to improve reliability of the water distribution system in the current Wheeler Zone and a portion of the Gravity Pressure Zone. The proposed Project objectives include the following:

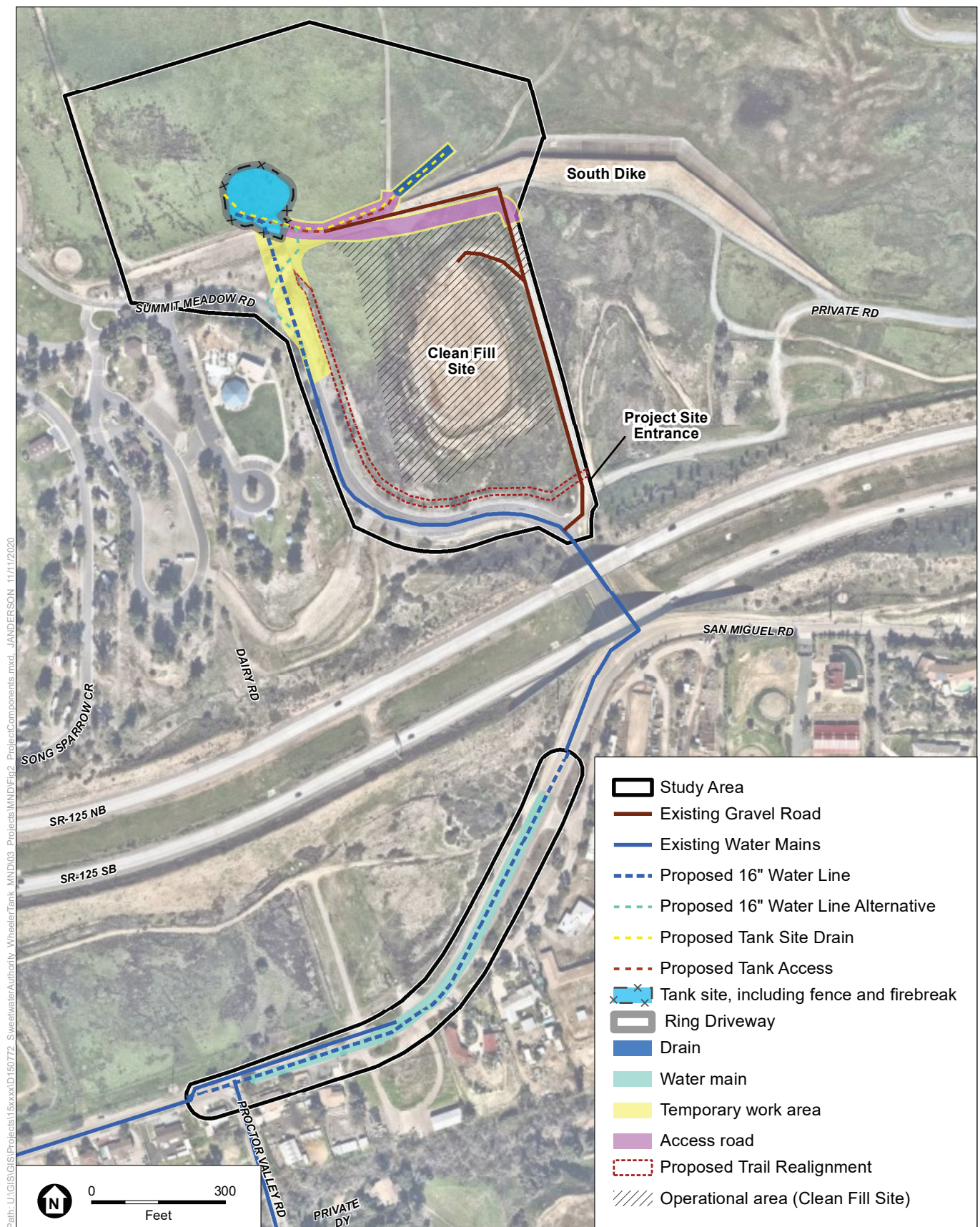
- To increase water storage capacity and meet current and projected 2040 maximum day and fire flow demands.



SOURCE: ESRI

Central-Wheeler Tank and System Improvement

Figure 1
Project Location



SOURCE: Digital Globe 2017; ESA 2018; Sweetwater Authority 2018

Central-Wheeler Tank and System Improvement

Figure 2
Project Components

- Avoid water service disruptions by providing additional water storage when the existing Wheeler Tank needs to be taken out of service for repairs or maintenance.
- Improve water pressure reliability within a portion of the Gravity Pressure Zone.
- Locate the proposed tank in an area with minimal aesthetic impacts to Sweetwater Summit Regional Park visitors

1.5 Project Description

1.5.1 Central-Wheeler Tank

The new 0.8 MG water storage tank would be constructed at the bottom of a hillside in an undeveloped portion of land owned by the Authority. The top of the hillside has an approximate elevation of 348 feet above mean sea level (amsl). Portions of the proposed tank pad would be excavated while other portions of the tank pad would be filled, such that the finished floor of the new tank has an elevation of approximately 292 feet amsl. Approximately 305 cubic yards of excess excavated soils would be placed in the Clean Fill Site located approximately 460 feet southeast from the tank site, within Authority property (Figure 2). The tank would have a maximum operating water level of 27 feet and a diameter of 71 feet. The total height of the tank will depend on seismic code criteria for providing sufficient freeboard above the maximum operating water level. The contractor selected through a competitive bidding process to construct the tank would be required to provide design calculations and determine the total height of the tank.

Trees and the hillside will partially block the view of the tank from Sweetwater Summit Regional Park. A 3-foot high concrete block wall would be constructed at the bottom of the hillside slope to hold any soil particles that could be washed away from the slope during periods of rain and prevent them from impacting the ring driveway at the CWT site.

To access the CWT, the Authority would add an additional road segment to the existing maintenance road network. The new unpaved road segment would be approximately 200 feet long and no more than 16 feet wide. A ring maintenance driveway around the tank would be asphalt-paved and 16 feet wide. Tank installation would also include electrical instrumentation for water level monitoring for wireless data reporting to Authority staff at the Robert A. Perdue Water Treatment Facility.

1.5.2 Water Transmission Mains

The proposed Project would include the installation of two sections of 16-inch diameter polyvinyl chloride (PVC) water main: one approximately 390 feet in length that would connect the CWT to an existing water main along Summit Meadow Road and the second, approximately 1,030 feet in length, would be installed within the public right-of-way along San Miguel Road to connect to existing water mains at San Miguel Road. An existing 6-inch asbestos cement (AC) water main along San Miguel Road will be abandoned in-place once the 1,030-foot segment of 16-inch PVC water main is installed. Five existing water service laterals connected to the 6-inch AC water main will be transferred to the new 16-inch PVC water main.

Additionally, the proposed Project would include a 12-inch-diameter PVC drain pipeline approximately 505 feet in length to drain the tank during scheduled maintenance or if the tank were to overflow above its maximum operating water level. The drain pipeline would extend to the southwest side of the Sweetwater Reservoir, just above the reservoir's high-water mark elevation of 239 feet amsl.

1.6 Project Construction

1.6.1 Central-Wheeler Tank

The proposed Project construction would take place for approximately nine months and it is anticipated to start in the year 2021. In general, construction activities would occur between 7:00 a.m. and 5:00 p.m., Monday through Friday, except on federal holidays.

Clearing and grubbing of the proposed Project site would occur on approximately 1 acre to install the new water tank, water mains, and maintenance roads. Unsuitable and excess soil removed during grading activities would be spread at the existing Clean Fill Site on Authority property, located approximately 460 feet southeast of the proposed CWT site location. The contractor for construction of the proposed Project would be required to provide a grading plan for excess soils. Deleterious materials such as concrete, asphalt, and construction materials accrued during construction would be removed and disposed of off-site in accordance with applicable State and local laws and regulations. It is anticipated that no more than 7,500 cubic feet of deleterious materials would be disposed off-site. Grading of the pad for the tank site will require approximately 472 cubic yards of imported soils suitable for foundation support because some of the existing on-site materials are not suitable for foundation support. Construction of the tank and ring driveway would require site preparation and clearing, excavation, grading, tank erection and painting, and site restoration. The CWT would be constructed of prefabricated steel rings, stacked and welded. The tank would have a maximum operating water level of 27 feet and a diameter of 71 feet. The total height of the tank would depend on seismic code criteria for providing sufficient freeboard above the maximum operating water level. The contractor selected through a competitive bidding process to construct the tank would be required to provide design calculations and determine the total height of the tank. Once erected, the tank would be sandblasted, primed, painted and treated in such a way as to blend in with the surrounding landscape. To provide for defensible space, the CWT would have a 30-foot minimum setback from the edge of the tank clear of vegetation and debris, as already coordinated with the Fire Authority Having Jurisdiction.

1.6.2 Water Mains

Construction of the water mains would involve trenching using conventional cut and cover techniques. The trenching would include saw cutting the pavement where applicable, trench excavation, water main installation, backfill operations, and re-surfacing to the original condition. The water mains would be installed at an approximate depth of 5 feet or less, with a trench width of approximately 5 feet. The construction corridor would be wide enough to accommodate the trench and to allow for secondary staging and vehicle access. Traffic control would be necessary during water main construction within the roadways. The Traffic Control Plan for the proposed

Project would be prepared by the contractor and coordinated with the County of San Diego (COSD).

Open trenches would be temporarily closed by covering them with steel plates. The construction equipment would generally include backhoes, excavators, dump trucks, concrete mixer, water truck, crane, bulldozer, steam or sheepsfoot roller, and plate compactor. Once pipelines are installed, the disturbed area would be restored to pre-construction conditions.

1.6.3 Construction Staging and Access

Primary staging for the proposed Project may occur within the Clean Fill Site. The Clean Fill Site is an existing operational area located near the proposed CWT site and used by Authority staff as a yard, for depositing excess soils and rock materials, and for other operational activities. The Clean Fill Site would be used for storing and staging of equipment and materials. During water main construction, the contractor may also choose secondary staging locations along Summit Meadow and San Miguel Roads within already disturbed areas. While all staging of materials would occur in already disturbed areas, staging areas noted above are for discussion purposes only as the contractor would ultimately select staging areas. The contractor would be required to develop and submit a site access plan for review and approval by the Authority.

The primary travel routes to the proposed Project site would be from SR-125 to either Paradise Valley Road exit or San Miguel Ranch Road exit, or from SR-54 through Bonita. Access within the Project boundary for construction equipment and workers would be through the existing maintenance road network located within the Sweetwater Reservoir property (see Figure 2). To access the tank, a road segment will be added to the existing maintenance road network.

It is anticipated that because of security requirements, each work-day morning the crews would be required to check in and sign in by accessing the Clean Fill Site and potential secondary staging areas by Summit Meadow Road and San Miguel Road. The crews would then proceed to the work site using the existing public roads and maintenance roads located in the vicinity of the proposed Project.

The CWT site would be secured by an 8-foot high chain link fence with three strand barbed wire. Site access would only be through one driveway secured by an entry gate.

1.7 Project Operation and Maintenance

Operation of the proposed CWT would not require daily staffing but would require periodic maintenance. Maintenance activities may include, but are not limited to, replacement of non-operational machinery and inspection and maintenance of all structures. Access for periodic monitoring and maintenance of the CWT would be provided through the existing and proposed CWT maintenance roads and driveway. Maintenance roads and other facilities will be maintained following industry standards. Once established, the maintenance road would not exceed a width of 20 feet.

The CWT would drain automatically through a tank overflow when the water level inside the tank exceeds the maximum storage level. There will be an air gap between the tank overflow and the drain structure connected to the 12-inch PVC drain pipe. The CWT would also be drained during needed repairs and maintenance inside the tank. In this drainage scenario, a valve to a tank floor drain would be opened so water can be released to the drain structure connected to the 12-inch PVC drain pipe. Consistent with the requirements of the Statewide General Permit for Drinking Water Discharges, water drained out of the tank, whether through the tank overflow or the floor drain, would be dechlorinated inside the drain structure connected to the 12-inch PVC drain pipe before being discharged at a location just upstream of the Sweetwater Reservoir's high-water mark. Riprap or other energy dissipating facility would be installed at the outfall of the 12-inch drain pipe to prevent soil erosion. The proposed tank and ancillary facilities would be supplied with electrical power from San Diego Gas and Electric. Grounds maintenance would occur as necessary.

1.8 Permits and Approvals

Potential regulatory agencies that may have approval requirements are identified in **Table 1**, and this list may be expanded for individual activities.

TABLE 1
REGULATORY REQUIREMENTS AND AUTHORIZATIONS

| Agency | Type of Approval |
|------------------------------------------------|-----------------------------------------------------------------------------|
| County of San Diego | Encroachment Permit and Easement |
| San Diego Regional Water Quality Control Board | Statewide General Permit for Drinking Water System Discharges |
| State Water Resources Control Board | Statewide Construction General Permit Amendment to Drinking Water Permit |

ENVIRONMENTAL CHECKLIST

Initial Study

1. **Project Title:** Central-Wheeler Tank and System Improvements Project
2. **Lead Agency Name and Address:** Sweetwater Authority
3. **Contact Person and Phone Number:** Erick Del Bosque, PE
Engineering Manager
Sweetwater Authority
(619) 409-6752
4. **Project Location:** San Diego County, near Sunnyside, California
5. **Project Sponsor's Name and Address:** Sweetwater Authority
505 Garrett Avenue
Chula Vista, CA 91910
6. **General Plan Designation(s):** Public Agency Lands
7. **Zoning:** S80 Open Space/Recreational
Rural and Semirural/Residential

8. Description of Project:

Central-Wheeler Tank and System Improvements Project involves the construction, operation, and maintenance of an 0.8 Million Gallon (MG) welded-steel water tank and associated water drainage and transmission pipelines to improve reliability of water distribution within Authority's Wheeler Pressure Zone, that will consist of the existing Wheeler Pressure Zone and a portion of the existing Gravity Pressure Zone.

9. Surrounding Land Uses and Setting.

Project activities would occur within public rights-of-way, within property currently owned by Authority, and easements owned by the Authority. Surrounding land uses to the Project area include single family residential homes along the south and southwest sides of San Miguel Road, open space and recreational facilities along the north and northwest sides of San Miguel Road, Sweetwater Summit Regional Park to the west of the proposed tank and pipeline on summit Meadow Road, Sweetwater Reservoir to the east of the proposed tank, and the Sweetwater Reservoir Riding and Hiking Trail to the south and east of the proposed tank.

10. Other public agencies whose approval is required

See Section 1.8 of the Project Description.

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

The Authority has not received any requests from Native American tribes for notifications of projects in the area pursuant to Assembly Bill (AB) 52.

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 and Forestry 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 checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input checked="" type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input checked="" type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Ron R. Mosher

Signature

12/29/2020

Date

Signature

Date

Environmental Checklist

Aesthetics

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------------------------|-------------------------------------|
| I. AESTHETICS — Except as provided in Public Resources Code Section 21099, 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 state scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? | <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 daytime or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

The proposed Project area is near the community of Sunnyside, in the immediate vicinity of the Sweetwater Reservoir, in San Diego County, California. The Sweetwater River watershed area in the vicinity of the proposed Project is characterized by scenic landform features, including rolling hillsides and expansive views of the San Miguel Mountain ridgeline, which are visually attractive and also provide opportunities for recreation (e.g. hiking, mountain biking, etc.). The San Miguel Mountain ridgeline includes Mother Miguel Mountain, which is designated by the COSD's General Plan as a resource conservation area within the Sweetwater Community Planning Area (Sweetwater Community Plan 2014). Human-made features, including the Sweetwater Summit Regional Park (Summit Park), Sweetwater Reservoir, and the reservoir's South Dike, which are surrounded by open space and some operational land uses, are also important scenic features of the area. The proposed CWT area is surrounded by open space, recreational trails, the reservoir, the shoreline fishing program, and is adjacent to Summit Park.

There are no state scenic highways in the proposed Project area. However, Bonita Road, San Miguel Road, Guajolote Road, and Sweetwater River Road in the Project vicinity are designated by the COSD as first priority scenic routes (County of San Diego 2011b). Summit Meadow Road provides access to Summit Park and the Sweetwater Reservoir's Fishing Program. Summit Meadow Road is at a higher elevation than the reservoir, and provides some unobstructed view points at its highest elevations. Summit Park supports over-night camping and day use facilities for public gatherings and picnics, and has access to the riding and hiking trail via a trail head located on the west side of the Sweetwater Reservoir property.

Operation of the proposed CWT would be automated, and maintenance activities sporadic, involving very few employees. Underground facilities, once constructed, are not considered to have an aesthetic impact.

- a) **Less than Significant.** The proposed Project involves the construction and operation of a 0.8 MG water tank and the installation of underground water transmission infrastructure. Construction activities would temporarily detract from the scenic quality of the surrounding landscapes for approximately nine months. Heavy-duty construction equipment would be visible to recreational users of the reservoir trail system and Summit Park, and to residences along San Miguel Road.

Upon completion of construction activities, only the proposed CWT and some of its appurtenances would be permanent visible features in the landscape, all located west of the Sweetwater Reservoir's South Dike. Visual simulations were prepared to illustrate the visual effect the proposed tank would have to scenic quality in the area. Photos were taken from the surrounding public vantage points within the vicinity for the proposed CWT and are depicted on **Figure 3**. From each of these photo locations a visual simulation of the proposed CWT was prepared. (**Figures 4 through 10**).

As currently proposed, the CWT would be installed by cutting into the gentle slope on the bottom of the grassy hillside. The hillside is located southeast of Summit Park's community center and amphitheater, and north of the park's playground. The tank would be screened by the hill and viewpoints at Summit Park, such as the community center and the amphitheater, would not be significantly impacted (see Figure 4). The tank would be partially screened from the playground area by existing trees bordering Summit Meadow Road (see Figure 7). The tank would be barely visible by people living on the north side of the reservoir due to the long distance to the tank (see Figure 10). The main visual impact would be to trail users and other recreationists using the reservoir's fishing program (see Figures 5, 6, 8, and 9). Trail users would see the tank as they pass by it, but as trail users continue their hike on a westerly or easterly direction, the tank would be covered by rolling hills or other existing features.

Through project design and by coordinating the location of the tank with COSD and other stakeholders, impacts to view sheds from Summit Park and surrounding areas would not occur or be minimal. Further, the tank would be sighted on the east side of the hill, to reduce the views from Summit Park attendants. To further reduce the visual impacts of the tank, design features would be implemented at construction, including but limited to painting the tank an earth tone to blend in with the surrounding visual character. As a result, the proposed Project would not have an adverse effect on scenic vistas and impacts would be less than significant.

- b) **No Impact.** There are no officially designated state scenic highways within the vicinity of the proposed Project, therefore, there would be no impact to scenic resources along a scenic highway (Caltrans, 2019).

- c) **Less than Significant.** Construction of the proposed Project would include the use of heavy-duty construction equipment for a nine-month period, which would temporarily detract from the existing visual character within the non-urbanized area surrounding the reservoir. Construction equipment and staging areas would also be temporarily visible to residences along San Miguel Road, and visitors to Summit Park, along Summit Meadow Road. Upon completion of the proposed Project, the water transmission pipelines would be underground, construction equipment would be removed, and the CWT would blend in with the existing visual character of the reservoir because the tank would have a sand-like color that would closely match the color of the dry vegetation surrounding the tank.

Per California Government Code (2019) sections 53091(d) and (e), the COSD's zoning ordinances do not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water by a local agency.

Therefore, the proposed Project would not substantially obstruct public views of the reservoir and surrounding lands nor would it conflict with zoning regulations governing scenic quality. Impacts to the visual character and quality of the surrounding landscape from construction and operation of the proposed Project would be less than significant, as shown in Figures 4 through 10.

- d) **Less than Significant.** The proposed CWT would include lighting in the vicinity of the proposed electrical equipment pad and lighting on a timer switch near the ladder on the tank's exterior to access the roof. The proposed CWT would be constructed below Summit Park, within a hillside. The hillside would provide a natural shield from sources of light to visitors of Summit Park campground should the lighting be activated. Furthermore, all lighting would be shielded and pointed away from sensitive receptors. The proposed CWT steel structure would be sand-blasted and painted which would prevent glare or shine from the tank. Therefore, impacts from light or glare to day or nighttime views in the area would be less than significant.

References

- California Government Code, 2019. Article 5, Regulation of Local Agencies by Counties and Cities.
https://leginfo.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV§ionNum=53091
- Caltrans, 2019. Scenic Highways. <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>
- Sweetwater Community Plan San Diego County General Plan, 2014:
https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Sweetwater_CP.pdf



SOURCE: Digital Globe 2017; ESA 2020.

Central-Wheeler Tank and System Improvement

Figure 3
Photo Location Map



Existing View



Proposed View

D:\150772.00

SOURCE: VisionScape Imagery, 2020

Central-Wheeler Tank and System Improvement

Figure 4

View 1 - Picture taken from Sweetwater Summit Regional Park, looking south east



Existing View



Proposed View

D:\50772.00

SOURCE: VisionScape Imagery, 2020

Central-Wheeler Tank and System Improvement

Figure 5

View 2 - Picture taken from a trail adjacent to Summit Meadows Road, looking north east



Existing View



Proposed View

D:\150772.00

SOURCE: VisionScape Imagery, 2020

Central-Wheeler Tank and System Improvement

Figure 6
View 3 - Picture taken from Summit Meadows Road, looking north



Existing View



Proposed View

D:\150772.00

SOURCE: VisionScape Imagery, 2020

Central-Wheeler Tank and System Improvement

Figure 7
View 4 - Picture taken from Summit Park's Playground, looking north



Existing View



Proposed View

D:\150772.00

SOURCE: VisionScape Imagery, 2020

Central-Wheeler Tank and System Improvement

Figure 8

View 5 - Picture taken from Fishing Program
Parking Lot, looking south west



Existing View



Proposed View

D:\150772.00

SOURCE: VisionScape Imagery, 2020

Central-Wheeler Tank and System Improvement

Figure 9

View 6 - Picture taken from the Sweetwater Dam Access Road, looking south



Existing View



Proposed View

D:\150772.00

SOURCE: VisionScape Imagery, 2020

Central-Wheeler Tank and System Improvement



Figure 10
View 7 - Picture taken from the north shore
of Sweetwater Reservoir, looking south

Agriculture and Forestry Resources

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------|-------------------------------------|
| II. AGRICULTURE AND FORESTRY RESOURCES — | | | | |
| In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project: | | | | |
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" 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"/> |

Discussion

- a-e) No Impact.** There are no designated agricultural (including Williamson Act contracts) or timberland or forestry lands within the proposed Project area (California Department of Conservation, 2019). The proposed Project would serve to provide the public with essential water storage and would not involve other changes in the existing environment that would result in impacts to agriculture or forest lands. Therefore, there would be no impact to agricultural or forestry resources as a result of implementing the proposed Project.

References

California Department of Conservation, 2019. California Important Farmland Finder.
<https://maps.conservation.ca.gov/DLRP/CIFF/>

Air Quality

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------|-------------------------------------|
| III. AIR QUALITY — | | | | |
| Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project: | | | | |
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" 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"/> |

Discussion

The proposed Project site is located within the San Diego Air Basin (SDAB), within the open landscape of the Sweetwater Reservoir and along San Miguel and Summit Meadow Roads. The SDAB is currently designated nonattainment for criteria air pollutants ozone (O₃), 1-hour and 8-hour, and particulate matter, (PM) 10 and PM2.5, under the California Ambient Air Quality Standards. It is designated attainment for CO, NO₂, sulfur dioxide (SO₂), lead, and sulfates (San Diego County Air Pollution Control District [APCD]). As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The proposed Project air emissions would be primarily generated during construction and the APCD does not regulate mobile emissions. For this reason, this analysis relies on the San Diego County Air Quality Guidelines for Determining Significance which provides screening thresholds (SLTs) for these pollutants (County of San Diego, 2007).

The maximum daily construction and operational emissions for the proposed Project were estimated with very conservative assumptions using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2. Operation of the proposed Project would be automated, requiring intermittent energy from the local electrical grid, and work on-site would be limited to occasional maintenance activities requiring a small number of staff usually consisting of two people. These occasional maintenance activities are expected to occur once per month. Therefore, operational air emissions associated with the implementation of the proposed Project are considered negligible, and not further evaluated under air quality resources (Appendix A, Central-Wheeler Tank Construction Emissions Modeling Output). Project-related air quality impacts would be considered cumulatively significant if any of the applicable significance thresholds would be exceeded during construction and operation.

- a) **No Impact.** San Diego Regional Air Quality Strategy (RAQS) and the San Diego County portion of the State Implementation Plan (SIP) outline the APCD's air emissions attainment programs and policies. The RAQS rely on information from the California Air

Resources Board (CARB) and the San Diego County Association of Governments (SANDAG). Emissions and reduction strategies related to mobile sources are considered in the RAQS and the SIP. Projects that are consistent with the growth anticipated in these plans would be consistent with the APCD's air quality plan. The proposed Project would not create new opportunities for additional growth, rather it is designed to provide a reliable water source to meet existing and future demands, as projected in the Authority's 2015 Master Plan.

The Project site is within areas designated as Public Agency Lands and is zoned S80 – Special Purpose (County of San Diego 2014; County of San Diego Planning and Development Services 2012). The proposed Project would not change the existing use of the Project site. Therefore, the proposed Project would be consistent with the San Diego County General Plan Land Use designations.

The proposed Project would have no impact on the APCD's air quality management plans and is considered to be accounted for in the RAQS.

- b) Less than Significant.** The SDAB region is in nonattainment for ozone, PM10 and PM2.5. Ozone is formed via chemical reactions between oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) in the atmosphere. While ozone emissions are not directly calculated, ozone precursors NO_x and VOC are for comparison to SLTs. The primary source of emissions from implementation of the proposed Project would be through the use of heavy duty construction equipment, vehicle trips associated with construction and operation of the proposed Project and architectural coating of the CWT. The proposed Project emissions were calculated using default construction equipment for a conservatively-assumed light industrial land use throughout the estimated construction schedule. More details are provided in the CalEEMod output files in Appendix A.

The Authority's construction contractor would be responsible for ensuring vehicles are in compliance with CARB's air emissions rules and regulations for operation of heavy-duty equipment. Nevertheless, construction emissions were estimated. As indicated in **Table 2**, all estimates of criteria pollutants performed in CalEEMod were far below the COSD's established SLTs (see Appendix A).

TABLE 2
PROPOSED PROJECT UNMITIGATED EMISSIONS LBS PER DAY

| | ROG | NO _x | CO | Total PM10 | Total PM2.5 |
|----------------------------------------------|-------|-----------------|------|------------|-------------|
| Estimated Unmitigated Construction Emissions | 31.93 | 14.94 | 8.00 | 1.93 | 0.77 |
| Estimated Unmitigated Operation Emissions | 0.40 | 0.17 | 0.25 | 0.05 | 0.02 |
| County of San Diego SLT | 75 | 250 | 550 | 100 | 55 |

Although the proposed Project would not exceed COSD's significant thresholds for PM, the COSD Grading, Clearing and Watercourses Ordinance, Section 87.428 requires all clearing and grading to be carried out with dust control measures adequate to prevent

creation of a nuisance to persons or public or private property (County of San Diego, 2007). The Authority or its contractor would control dust through the application of water over exposed soils as will be described in the Storm Water Pollution and Prevention Plan for the proposed Project and in accordance with Section 87.428.

Therefore, considering the proposed unmitigated Project's construction emissions would not exceed daily maximum thresholds of significance, the proposed Project would not result in cumulatively considerable net increase of a criteria pollutant.

- c) **Less than Significant.** Sensitive receptors are typically defined as schools, hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. However, the COSD's definition of a sensitive receptor also includes residents. A component of the proposed Project involves the installation of a 16-inch water transmission main within the public right-of-way along San Miguel Road, approximately 50 feet from the nearest residences located on the south side of San Miguel Road. The proposed CWT would be installed within 360 feet of the entrance to Sweetwater Summit Regional Park and over 500 feet from the nearest residence. The two primary emissions of concern regarding health effects for land development projects are diesel-fired particulates (DPM), occurring from PM10 exhaust sources, and carbon monoxide (CO) (San Diego County, 2007). As indicated in Table 2, the proposed Project would not emit PM10 or CO in quantities that could pose health concerns.

Construction of the project would result in short-term DPM emissions, which are Toxic Air Contaminants, from on-site heavy-duty equipment. Project construction would generate DPM emissions from the use of off-road diesel equipment required for site grading and excavation, and other construction activities. The CARB and U.S. Environmental Protection Agency are the regulatory agencies for implementation and enforcement of standards and test procedures for heavy-duty construction equipment through the On-Road Heavy-Duty Vehicle Program (CARB, 2019). Since the APCD has limited authority to regulate mobile sources, construction contractors would be responsible for ensuring heavy duty vehicles are in compliance with CARBs DPM air emissions rules and regulations.

The construction activities for the proposed Project would be temporary in nature and short-term, and produce maximum daily emissions far below San Diego County's SLTs over the duration of the construction period. During construction of the water transmission main, the residences could be potentially exposed to combustion emissions and fugitive dust; however, the construction activities are short-term and would move along San Miguel Road. Because these construction activities would not be limited to one location, no one individual residence would be exposed for an extended period of time. The construction of the CWT would also be minimal in duration, produce less than significant emissions, and would be located over 500 feet away from the nearest residence. Further, the proposed Project would not generate new operational emissions, with the exception of one monthly maintenance trip, that could impact sensitive

receptors. Thus, the proposed Project would be less than significant and a health risk assessment is not required.

- d) **Less than Significant.** While construction equipment exhaust and application of asphalt would temporarily generate odors, the proposed Project activities would be typically confined to the immediate vicinity of the equipment and would only be discernable offsite for brief instances depending on wind strength and direction. Therefore, impacts as a result of odors generated during construction of the proposed Project would be less than significant.

References

- California Air Resources Board (CARB), 2019. On-Road Heavy-Duty Vehicle Program.
<https://ww3.arb.ca.gov/msprog/onroadhd/onroadhd.htm>
- County of San Diego. 2007. Guidelines for Determining Significance for Air Quality.
<https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf>
- San Diego County Air Pollution Control District (APCD). 2019.
<https://www.sandiegocounty.gov/content/sdc/apcd/en/air-quality-planning/attainment-status.html>
-

Biological Resources

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------|--------------------------|
| IV. BIOLOGICAL | | | | |
| RESOURCES — Would the project: | | | | |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <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 checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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 checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

The proposed CWT is located adjacent to the Sweetwater Reservoir, a human-made lake, surrounded by grasslands and other wildlife habitat characteristics that attract common and special-status flora and fauna species. A records review and biological resources survey was completed for the proposed Project to determine the presence or potential presence of special-status species within the proposed Project area. The results are documented in the Biological Resources Letter Report and Focused Species Survey Reports (Appendix B). The biological survey of the proposed Project area was conducted on May 8, 2019. Focused surveys for federal and state protected flora and fauna were conducted as follows:

Quino Checkerspot Butterfly habitat assessment was conducted on February 12, 2019. Potentially suitable habitat was assessed based on the quality of the habitat, quality of the surrounding habitat, nectar sources, and presence of host plants. Quino Checkerspot butterfly is a federally endangered species. The proposed location for the CWT has been mapped by the US Fish and Wildlife Service (USFWS) as a Recommended Quino Survey area. Surveys indicate the proposed Project area does not support the Quino Checkerspot butterfly or habitat. The species has never been observed in the proposed CWT Project area.

Coastal California Gnatcatcher surveys were conducted between March 22 and May 31, 2019. Surveys followed the methodologies set forth by the US Fish and Wildlife Service (USFWS) 1997 Coastal California Presence/Absence Survey Protocol. Coastal California gnatcatcher is federally endangered and a state species of special concern, and has been observed in the vicinity of the proposed CWT project area.

Burrowing Owl surveys were conducted between March 26 and June 28, 2019. Surveys followed the methodologies set forth in the 2012 California Department of Fish and Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation. Burrowing owl is a state species of special concern, and has been observed in the vicinity of the proposed CWT project area.

Otay Tarplant surveys were conducted between May 28 and June 26, 2019, during the peak blooming period for this species. The Otay tarplant is a state and federally listed endangered or threatened species. The proposed CWT would be constructed within Otay tarplant federally designated critical habitat.

During focused surveys, Grasshopper sparrow, a state species of special concern, was detected in dense non-native grassland habitat immediately adjacent to the proposed Project area. The California horned lark, a state watch list species, was also detected. One rare plant species, the San Diego County viguiera, was detected on the western margin of the Clean Fill Site outside of the construction footprint of the proposed Project. Additional sensitive species are known or have the potential to occur and are addressed in the Biological Resources Report (Appendix B). However, no special-status flora and fauna species were observed during any of the focused species surveys or are known within the construction footprint of the proposed Project.

Operation of the proposed Project would be automated and work on-site would be limited to occasional maintenance activities within the Project area requiring a small number of staff, therefore, operational impacts associated with the implementation of the proposed Project are considered insignificant, and not further evaluated under biological resources. Biological resources recorded during surveys conducted for the proposed Project have been incorporated herein. Further details can be found in Appendix B.

- a) **Less than Significant with Mitigation Incorporated.** Although no state or federally listed species were observed during the focused surveys, the potential for state and federally listed avian species, and other avian species also protected under the Migratory Bird Treaty Act, to occur within or adjacent to the proposed Project area is high. Construction noise from heavy duty equipment and personnel on-site could disrupt avian roosting, foraging, and nesting activities. Construction of the proposed Project could result in impacts to avian species, including federal and state species, and other migratory and nesting birds, including horned lark, burrowing owl, California gnatcatcher, Grasshopper sparrow, Cooper's hawk, and tri-colored blackbird. Pre-construction surveys for avian species are required to ensure protection of nesting, foraging and roosting state and federally listed species in the vicinity of the proposed Project. Implementation of **Mitigation Measures BIO-1 through BIO-3** would be required to ensure that impacts to

federal and state listed avian species and other migratory and nesting birds would be less than significant.

Mitigation Measures

BIO-1: If construction initiation occurs between February 1 and September 15, a pre-construction nesting bird and raptor survey of the proposed Project area shall be completed by a qualified biologist. If any active nests are detected, the area will be flagged and mapped on construction plans along with a buffer as recommended by the qualified biologist. The buffer area(s) established by the qualified biologist will be avoided until the nesting cycle is complete or it is determined that the nest is no longer active. The qualified biologist shall be a person familiar with bird breeding behavior and capable of identifying the bird species of San Diego County by sight and sound and determining alterations of behavior as a result of human interaction. Buffers will be based on local topography and line of sight, species behavior and tolerance to disturbance, and existing disturbance levels.

BIO-2: Prior to initiation of project clearing, grading, grubbing, or other construction activities, a pre-construction survey for the presence of California gnatcatcher to verify species absence shall be conducted. If present in the project construction footprint or immediate surrounding area (up to 300 feet), coordination with USFWS and CDFW shall occur to establish measures to reduce potential impacts to California gnatcatcher. Such measures may include but are not limited to: delay of construction until the species is no longer present after the breeding season, implementation of noise reduction techniques, or monitoring to ensure the species is not harmed during project implementation.

BIO-3: Prior to initiation of project clearing, grading, grubbing, or other construction activities, pre-construction surveys for the presence of burrowing owl to verify species absence shall be conducted. The pre-construction surveys shall follow the take avoidance survey methods outlined in the *2012 CDFW Staff Report on Burrowing Owl Mitigation*. The first survey shall be conducted prior to 30 days of initial site disturbance, and the second survey shall occur within 24 hours of initial site disturbance. Subsequent pre-construction surveys will be required if lapses in the project occur exceeding 72 hours. If present in the project construction footprint or immediate surrounding area, coordination with CDFW shall occur to establish measures to avoid potential impacts to burrowing owl. Such measures may include but are not limited to: construction avoidance until the species is no longer present after the breeding season, installation of one-way burrow exclusion devices, construction of alternate burrow sites in the nearby vicinity prior construction, or monitoring to ensure the species is not harmed during project implementation. Loss of foraging habitat would be compensated as described in BIO-4.

- b) Less than Significant with Mitigation Incorporated.** One sensitive plant species, San Diego viguiera, was observed during the focused surveys. Impacts to San Diego viguiera would be avoided by the proposed CWT project. Although no Otay tarplant was detected during the focused surveys, the proposed CWT would be constructed within federally designated critical habitat. The proposed CWT, access, and drain line would permanently disturb 0.52-acres of non-native grassland, which is considered a sensitive vegetation community. Permanent impacts to non-native grassland represent less than one percent of the non-native grassland habitat type present in the proposed CWT project area. However, impacts to non-native grassland vegetation would be mitigated in accordance

with previous CEQA documents and/or project mitigation agreements between the Authority and the wildlife agencies. **Table 3** summarizes the impacts and mitigation ratios for permanent and temporary impacts to the vegetation communities and land cover types that would result from implementation of the proposed Project. Mitigation for permanent impacts would occur through the conservation of similar habitat and mitigation for temporary impacts would occur through revegetation on-site. Permanent and temporary impacts to disturbed habitat and urban/developed are considered less than significant and would not require mitigation. The disturbed habitat would be restored in place to pre-project conditions or better at completion of the proposed Project. This will be inspected and enforced during construction by a qualified biologist. Implementation of **Mitigation Measure BIO-4**, requiring mitigation for permanent and temporary impacts to non-native grassland, would reduce impacts to sensitive natural communities to less than significant.

TABLE 3
IMPACTS AND MITIGATION FOR VEGETATION COMMUNITIES AND LAND COVER TYPES

| Vegetation Community/Land Cover Type | Acreage within the Project Area | Permanent Impacts (acres) | Mitigation Ratio | Mitigation Acreage | Temporary Impacts (acres) | Revegetation Ratio | Revegetation Acreage |
|-----------------------------------------|---------------------------------|---------------------------|------------------|--------------------|---------------------------|--------------------|----------------------|
| Sensitive Vegetation Communities | | | | | | | |
| Non-native grassland (42200) | 8.6 | 0.52 | 1:1 | 0.52 | 0.14 | 1:1 | 0.14 |
| Other Land Cover Types | | | | | | | |
| Disturbed Habitat (11300) | 7.6 | 0.07 | - | 0.00 | 0.41 | 1:1 | 0.41 |
| Urban/Developed (12000) | 6.5 | 0.17 | - | 0.00 | 0.72 | - | 0.00 |
| Total Acres | 22.7 | 0.76 | - | 0.52 | 1.27 | - | 0.55 |

BIO-4: Permanent impacts to 0.52 acre of non-native grassland shall be mitigated at a 1:1 ratio. Mitigation for permanent impacts shall be accomplished through preservation at the Authority's existing Skelton Habitat Mitigation Area or similar site on Authority property. Temporary impacts to 0.14 acre of non-native grassland shall be mitigated at a 1:1 ratio. Mitigation for temporary impacts shall be accomplished through on-site revegetation. Prior to initiating project impacts, a habitat revegetation plan will be developed to lay forth methods for re-seeding and re-vegetating temporarily disturbed areas with suitable native species. In this, temporary impacts to disturbed habitat would be revegetated with a grassland or coastal sage scrub plant pallet, as appropriate and based on the finished site conditions and adjacent habitat types. Re-vegetation shall occur at the conclusion of construction activities, per the methodologies set forth in the revegetation plan.

Additionally, an inspection for Otay tarplant during the appropriate blooming season (i.e. May – June) is recommended to verify absence in the proposed Project footprint *areas* only in the same year as construction. If present, contact the USFWS and CDFW to secure permitting as necessary. Unavoidable impacts should be mitigated in the form of permanent conservation and management of similar occupied or potential Otay tarplant habitat on the Reservoir property at a ratio to be agreed on with USFWS and/or CDFW.

The conserved mitigation area may require restoration if Otay tarplant is lacking and can also co-occur with any mitigation for permanent habitat loss from the proposed Project.

- c) **Less than Significant.** There are no state- or federally-protected wetlands within the proposed Project footprint. However, the Project area contains the southern end of Sweetwater Reservoir, which is considered jurisdictional waters by the U.S. Army Corps of Engineers (USACE). Installation of the CWT drain line would terminate above the ordinary high water mark of 239-feet, outside of the USACE jurisdictional boundary. Additionally, the Authority or its contractor would comply with best management practices (BMPs) established under the permits to control sediment and runoff during construction and the Authority will comply with the requirements of the Statewide General Permit for Drinking Water System Discharges during operation and maintenance activities of the CWT (see discussion in *Hydrology and Water Quality*).

Thus, no permanent or temporary impacts would result to any state or federally protected wetlands or waters from implementation of the proposed Project. With implementation of BMPs under the permits required for construction and operation of the proposed Project, impacts to protected wetlands would be less than significant.

- d) **Less than Significant with Mitigation Incorporated.** The proposed CWT project area is located in a wildlife movement corridor associated with the Sweetwater Reservoir and Sweetwater River. Installation of the CWT, access road, and CWT drain line would be a permanent feature in the landscape. However, the total footprint of these project components is small in comparison to the availability of habitat surrounding the area. Therefore, wildlife species movement would not be adversely effected.

The proposed CWT project area has potential to provide avian nesting habitat for state and federally designated sensitive species through on-site revegetation with native plant species. Implementation of **BIO-1** through **BIO-3** would ensure protection of avian nurseries.

Considering the size of the proposed CWT, and mitigation measures described above, impacts to wildlife movement or avian nesting sites would be reduced to less than significant.

- e-f) **Less than significant.** The proposed Project is located within Authority managed property and along roadsides in designated utility corridors. The Project area within the Sweetwater Reservoir Property is not part of any natural community conservation plans or habitat conservation plan, including the COSD's Multiple Species Conservation Program (MSCP).

A portion of the proposed Project occurring along San Miguel Road would be adjacent to a pre-approved mitigation area associated with the COSD (1997) Multiple Species Conservation Program (MSCP) plan area. However, all the work within San Miguel Road (installation of a water main) would occur within the already developed road and no impacts to biological resources protected by the MSCP would occur. Therefore, the

project would not conflict with any adopted Natural Community Conservation Planning areas such as the COSD's MSCP.

Impacts to local policies and ordinances related to biological resources would be less than significant.

References

County of San Diego (County). 1997. Multiple Species Conservation Program County of San Diego Subarea Plan. Adopted October 22.

Cultural Resources

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------|--------------------------|
| V. CULTURAL RESOURCES — Would the project: | | | | |
| a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §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"/> |

Discussion

A Cultural Resources Assessment (CRA) was prepared by ESA in October 2020. The CRA included an assessment of the recorded sites and surveys occurring within a 0.5-mile radius of the proposed Project site as well as a pedestrian field survey to confirm recorded sites and evaluate potential for new cultural resources discoveries. The CRA (**Appendix C**) will be kept on-file at the office of the Authority, in Chula Vista, California.

a) **Less than Significant with Mitigation Incorporated.** A records search for the proposed Project was conducted on December 19, 2018, at the California Historical Resources Information System South Coastal Information Center housed at San Diego State University. The records search indicated that the proposed Project site had been included in previous cultural resources studies. Eight prehistoric archeological resources have been previously recorded within a 0.5-mile radius of the proposed Project site. Of the eight resources, one (P-37-005695) partially overlaps the proposed Project components including the proposed water main and the margin of the proposed tank on the tank's boundary. The recorded resource is a prehistoric archaeological site consisting of a large but sparse scatter of flaked stone, ground stone, and shell. A field survey of the proposed Project site conducted on January 15, 2019, confirmed that the scatter of surficial archaeological materials associated with P-37-005695 remains within the northwestern portion of the Project site. These artifacts are surficial in nature and portions of the recorded site have been displaced by past construction activities and reservoir operations. Furthermore, the elevated topography and shallow, cobbly soils at the proposed Project site indicate that a geological mechanism for burial of archaeological resources is lacking. As such, a subsurface archaeological deposit in this area is highly unlikely, and what remains likely constitutes the scattered remnants of what was once a much larger archaeological site that has been mostly destroyed.

- While it is highly unlikely that a substantial archaeological deposit is present, given dense grass cover and poor ground visibility during the field survey, it is possible that additional artifacts are present, and construction of the proposed CWT as well as associated drain pipeline, water transmission pipeline and tank access road, could encounter archaeological materials. Additionally, the results of the records search indicate that the area should be considered sensitive for prehistoric archaeological resources. Given the sensitivity of the proposed Project area, **Mitigation Measures CR-**

1 through CR-3 would ensure that any impacts to historical resources would be less than significant.

Mitigation Measures

CR-1: Worker Sensitivity Training. Prior to the start of ground-disturbing activities, the Applicant shall retain a Qualified Archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior 2008) to carry out all mitigation related to cultural resources. Prior to the start of ground disturbing activities, all construction personnel shall be trained to identify the types of cultural resources that may be encountered during Project implementation. These include both prehistoric and historic period archaeological resources. In addition to cultural resources recognition, the training shall convey procedures to follow in the event of a potential cultural resources discovery, including notification procedures. The training shall be provided by the Qualified Archaeologist or an archaeologist working under their supervision.

CR-2: Construction Monitoring. An archaeological monitor (working under the direct supervision of the Qualified Archaeologist) and a Native American monitor shall observe all project-related ground-disturbing activities including but not limited to brush clearance, vegetation removal, grubbing, and grading. The Qualified Archaeologist, in coordination with the Authority and the Native American monitor(s), may reduce or discontinue monitoring if it is determined that the possibility of encountering buried archaeological deposits is low based on observations of soil stratigraphy or other factors. This may be particularly true for the portion of the project being constructed within San Miguel Rd. Archaeological monitoring shall be conducted by an archaeologist familiar with the types of archaeological resources that could be encountered within the Project.

The Native American monitor shall be from a tribe that is culturally and geographically affiliated with the Kumeyaay tribe. The archaeological and Native American monitors shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of a discovery until the Qualified Archaeologist has evaluated the discovery, consulted with the Authority, and determined appropriate treatment (as prescribed in CR-3). The archaeological monitor shall keep daily logs detailing the types of activities and soils observed, and any discoveries. After monitoring has been completed, the archaeologist shall prepare a monitoring report that details the results of monitoring. The report shall be submitted to the Authority and any Native American groups who request a copy. The Qualified Archaeologist shall also submit a copy of the final report to the California Historic Resources Information System South Coastal Information Center.

CR-3: Protocols for Unanticipated Discoveries. If cultural resources are encountered during Project implementation, all activity within 50 feet of the find should cease until the find can be evaluated by the Qualified Archaeologist. If the Qualified Archaeologist determines that the resource may be significant, he or she will notify the Authority and develop an appropriate treatment plan for the resource. The Authority shall consult with the Native American monitor or other appropriate Native American representatives in determining appropriate treatment for unearthened cultural resources if the resources are prehistoric and Native American in nature. In considering any suggested measures proposed by the archaeologist to mitigate impacts to archaeological resources, the Authority will determine whether avoidance is feasible in light of factors such as the nature of the find, Project design, costs, and other considerations. If avoidance is

infeasible, other appropriate measures will be instituted, which could include, among other options, detailed documentation, or data recovery excavation. Work may proceed on other parts of the Project area while mitigation for cultural resources is being carried out.

- b) **Less than Significant with Mitigation Incorporated.** An archaeological field survey confirmed that archaeological materials remain present in the northwestern portion of the proposed Project site (P-37-005695). While no cultural materials were identified in the location of proposed Project activities, ground visibility was poor during the survey and it is possible that additional artifacts are present. As such, construction of the proposed Project could encounter archaeological materials. While it is highly unlikely that a substantial archaeological deposit is present, it is possible, and the positive results of the records search indicate that the area should be considered sensitive for prehistoric archaeological resources. Given the sensitivity of the proposed Project site, **Mitigation Measures CR-1 through CR-3** would ensure that any impacts to archeological resources would be less than significant.

Mitigation Measures

Implement Mitigation Measures CR-1 through CR-3.

- c) **Less than Significant.** The proposed Project involves excavation to install the CWT near a hillside that is in the immediate vicinity of the reservoir, and install water mains at Summit Park and public right-of-way along San Miguel Road. No human remains were identified in the proposed Project site as a result of the archival research or field survey. It is anticipated that the proposed Project would have no impact on human remains. In the unlikely event that human remains are uncovered during ground disturbing activities, appropriate procedures would be followed that would ensure protection of the remains. This includes that no further disturbance occurs until the County Coroner has made the necessary findings as to the origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC would then identify the person(s) thought to be the Most Likely Descendant of the deceased Native American, who would then help determine what course of action should be taken in dealing with the remains. Therefore, the project would have less than significant impacts to human remains as a result of implementation of the proposed Project.
-

Energy

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------------------------|--------------------------|
| 6. ENERGY — Would the project: | | | | |
| a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? | <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"/> |

Discussion

- a) **Less than significant impact.** This section analyzes impacts on energy resources due to construction and operation of the Project. Appendix F of the 2019 California Environmental Quality Act (CEQA) Guidelines states that in order to ensure that energy implications are considered in project decisions, Environmental Impact Reports (EIRs) should include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F further states that a project's energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the Project Description, Environmental Setting, and Impact Analysis portions of technical sections, as well as through mitigation measures and alternatives.

The analysis below includes the project's energy requirements and energy use efficiencies by energy type for each stage of the project (construction and operations). The project would consume energy during construction activities primarily from on- and off-road vehicle fuel consumption in the form of diesel, gasoline, and electricity from water conveyance for dust control. Project operations would consume energy in the form of electricity for lighting and water conveyance, natural gas for heating/cooling, and fossil fuels for employee trips.

Construction

The project would consume energy during construction activities, primarily from on- and off-road vehicle fuel consumption in the form of diesel, gasoline, and electricity from water conveyance for dust control. The analysis below includes the project's energy requirements and energy use efficiencies by energy type for each stage of the project.

The estimated fuel usage for off-road equipment is based on the number and type of equipment that would be used during construction activities, hour usage estimates, the total duration of construction activities, and hourly equipment fuel consumption factors from the CARB OFFROAD model, which was used in the project's air quality analysis. On-road vehicles would include vendor trucks to deliver supplies necessary for project construction, and fuel used for employee commute trips. Electricity used from water conveyance for dust control was calculated using assumptions for gallons used per acre

per day and CalEEMod water conveyance intensity factors were applied to calculate total construction electricity consumption. Construction activities typically do not involve the consumption of natural gas. **Table 4** summarizes the project's total fuel and electricity consumption from construction activities.

TABLE 4
SUMMARY OF ENERGY CONSUMPTION DURING PROJECT CONSTRUCTION

| Fuel Type | Annual Average Quantity |
|-----------------------------------|--------------------------------|
| Gasoline | gallons |
| On-Road Construction Equipment | 782 |
| Off-Road Construction Equipment | 0 |
| Total Gasoline | 782 |
| Diesel | gallons |
| On-Road Construction Equipment | 2,988 |
| Off-Road Construction Equipment | 9,969 |
| Total Diesel | 12,957 |
| Electricity | kWh |
| Water Conveyance for Dust Control | 3,445 |
| Project Length | 9 Months |
| SOURCE: ESA, 2020 | |

The energy use summary provided above in Table 4 represents the amount of energy that could potentially be consumed during project construction based on a conservative set of assumptions, provided in Appendix C, of this Draft IS/MND. As shown, on- and off-road vehicles would consume an annual average of 782 gallons of gasoline, approximately 12,957 gallons of diesel fuel, and approximately 3,445 kWh of electricity throughout the project's construction. For comparison purposes, the fuel usage during project construction would represent approximately 0.0001 percent of the 2018 annual on-road gasoline-related energy consumption and 0.014 percent of the 2018 annual diesel fuel-related energy consumption in San Diego County. Electricity would represent approximately 0.00002 percent of San Diego Gas and Electric's (SDG&E) total electricity sales for 2019. Detailed calculations are shown in Appendix C, of this Draft IS/MND.

The project construction contractors would comply with applicable CARB regulations governing the accelerated retrofitting, repowering, or replacement of heavy duty diesel on- and off-road equipment. CARB adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling time in order to reduce public exposure to diesel particulate matter and other toxic air contaminants (Title 13 California Code of Regulations [CCR], Section 2485). CARB approved the Truck and Bus regulation to reduce NO_x, PM₁₀, and PM_{2.5} emissions from existing diesel vehicles operating in California (13 CCR, Section 2025). In addition to limiting exhaust from idling trucks, CARB recently promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower to reduce emissions by requiring the installation

of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR, Section 2449).

While intended to reduce construction criteria pollutant emissions, compliance with the above anti-idling and emissions control regulations would also result in efficient use of construction-related energy and the minimization or elimination of wasteful and unnecessary consumption of energy. According to the CARB staff report that was prepared at the time the anti-idling ATCM was being proposed for adoption in late 2004/early 2005, the regulation was estimated to reduce non-essential idling and associated emissions of diesel particulate matter and NO_x emissions by 64 and 78 percent respectively in analysis year 2009.

These reductions in emissions are directly attributable to overall reduced idling times and fuel combustion as a result of compliance with the regulation. Project compliance with CARB regulations would result in energy savings of approximately 43 gallons of diesel fuel saved per year, assuming a fuel reduction equivalent to the percent reduction of diesel particulate matter or NO_x as estimated by CARB for 2009 (the lesser value, i.e., 64 percent, is used as a conservative assumption). Heavy-duty engines continue to become more efficient and reduction amounts may lessen in the future due to this. Nonetheless, it is still the case that the project would reduce its consumption of diesel fuel with compliance with the anti-idling measure. Construction electricity use would be temporary, sporadic, and would cease upon completion of the project. Electricity for water conveyance would only be used when necessary to prevent fugitive dust, consistent with San Diego Air Pollution Control District Rule 55, and such electricity use would decrease after the completion of excavation and paving phases when the site is paved and would require less water for dust to control. Thus, construction of the proposed project would use energy necessary to build the project, but would not result in the wasteful, inefficient, and unnecessary use of energy and impacts would be less than significant.

Operations

During operation of the Project, energy would be consumed for multiple purposes, including, but not limited to, lighting; and the use of electronics and equipment. Energy would also be consumed during Project operations related to water usage. Fossil fuel consumption from operations would mainly come from employees trips. The Project would include ancillary facilities that houses electronic monitoring equipment, but would not be regularly occupied and would not have any natural gas usage. **Table 5**, below, summarizes the project's operational energy sources in comparison to SDG&E and San Diego County's transportation fuel use.

TABLE 5
PROJECT OPERATIONAL ENERGY USAGE AND REGIONAL ENERGY SUPPLY

| Source | Natural Gas Per Year (kBtu) | Electricity Per Year (kWh) | Gasoline (gallons) | Diesel (gallons) |
|----------------------------------|-----------------------------|----------------------------|--------------------|------------------|
| SDG&E (2019) | 83,950,000,000 | 17,720,750,000 | — | — |
| San Diego County Fuel Use (2018) | — | — | 1,208,000,000 | 92,000,000 |
| Proposed Project | | | | |
| Building Electricity | 0 | 136,315 | — | — |
| Transportation Energy | — | — | 891 | 35 |
| Percent of SDG&E/County | — | 0.0007% | 0.0001% | 0.00004% |

NOTES:

Pipeline and water tank projects do not use natural gas. No natural gas infrastructure is included in the project.

SOURCE: ESA, 2020.

The Project would increase demand for electricity including what is needed to support building operations and to power electronic monitoring equipment necessary to ensure the proper functioning and safety of the system. As shown in Table 5, the Project would result in a projected consumption of electricity of approximately 136,315 kWh per year and represent 0.0007 percent of SDG&E's total sales in 2019.

The Project would not include natural gas infrastructure, nor does it require the use of natural gas. Therefore, the Project would not increase the demand for natural gas resources and impacts would be less than significant.

The Project would increase the demand for fuel resources from periodic inspection and maintenance trips. As shown in Table 5, the Project is projected to generate an annual demand for gasoline totaling approximately 891 gallons per year and generate annual demand for diesel totaling approximately 35 gallons. The fuel consumption generated by the project represents 0.0001% of the County's total gasoline use and 0.00004% of the County's diesel use in 2018. As the Project would only generate new vehicle trips from periodic, but necessary, inspection and maintenance trips, and due to the limited number of Project trips for this purpose, the Project would not have a significant impact on transportation or traffic in the project vicinity. Therefore, the project's fuel consumption would not result in the wasteful, inefficient, and unnecessary consumption of fuel and impacts would be less than significant.

- b) **Less than Significant.** Construction equipment would comply with federal, State, and regional requirements where applicable. With respect to truck fleet operators, the U.S. EPA and NHSTA have adopted fuel efficiency standards for medium- and heavy-duty trucks. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline,

depending on the vehicle type. U.S. EPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type. The energy modeling for trucks does not take into account specific fuel reductions from these regulations, since they would apply to fleets as they incorporate newer trucks meeting the regulatory standards; however, compliance with these regulations would have an overall beneficial effect on reducing fuel consumption from trucks over time as older trucks are replaced with newer models that meet the standards.

In addition, construction equipment and trucks are required to comply with CARB regulations regarding heavy-duty truck idling limits of five minutes at a location and the phase-in of off-road emission standards that result in an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines. Although these regulations are intended to reduce criteria pollutant emissions, compliance with the anti-idling and emissions regulations would also contribute to increased efficiency in the use of construction-related energy.

Electricity usage during Project operations, as reported in Table 5, would be minimized through incorporation of applicable 2019 Title 24 standards (which may include lighting control and energy efficiency requirements), modern equipment installation, and applicable CALGreen requirements.

With respect to operational transportation-related fuel usage, the Project would support statewide efforts to improve transportation energy efficiency and reduce transportation energy consumption with respect to private automobiles. The Project would comply with CAFE fuel economy standards and the Pavley and Low Carbon Fuel standards, which are designed to result in more efficient use of transportation fuels.

As discussed in detail in Section VIII, *Greenhouse Gas*, the proposed Project is designed to meet the needs identified in the Sweetwater Authorities 2015 Water Distribution System Master Plan, and would not pose any apparent conflicts with CARB recommended actions, like green building codes or water use efficiency, or generate emissions that could impair the state's ability to implement AB 32. Therefore, since the project is consistent with local GHG reduction planning, Title 24, CALGreen standards, and would not hinder implementation of AB32, it does not obstruct any applicable renewable energy or energy efficiency plan and impacts are less than significant.

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Geology and Soils

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------------------------|-------------------------------------|
| VII.GEOLOGY AND SOILS — Would the project: | | | | |
| a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <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 type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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 type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | <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"/> |

Discussion

All of San Diego County is within Seismic Risk Zone 4 and subject to ground shaking (County of San Diego, 2007). The Rose Canyon fault runs along the coast and beneath downtown San Diego, capable of earthquakes of magnitude 6.5 to 6.8. The Elsinore and San Jacinto faults cut through East County and can also generate moderately-sized but potentially damaging earthquakes (California Earthquake Authority, 2019).

Geologic units within the proposed Project site are mapped as early to middle Pleistocene-age alluvial flood plain deposits, the early to middle Pleistocene-age Linda Vista Formation, and the middle Eocene-age Mission Valley Formation.

- a) **Less than Significant.** The Project is not within a Alquist-Priolo zone nor are there any active faults within the proposed Project area. The Rose Canyon Fault, the nearest active fault, is located approximately 12 miles west of the proposed Project area. The proposed Project involves the installation of a 0.8 MG above-ground water storage tank, and associated water transmission pipelines, to work in conjunction with the existing Wheeler water storage tank that has not seismically retrofitted. Due to the size of the proposed

Project, location, and low elevation, and underlying materials, no impacts associated with liquefaction, seismically induced settlement, landslides, and tsunamis are anticipated to occur (Sweetwater Authority, 2018). However, strong ground shaking could disrupt the tank's concrete support structure. As required by the COSD, the Authority would design the project to include engineering measures that would reduce risk of rupture in accordance with the California Building Code, Uniform Building Code, and other seismic and geologic hazard safety standards (San Diego County, 2011). Considering the pipelines would be buried underground and the CWT would be located in a remote uninhabited location, stabilized and designed to ensure seismic stability, the potential for people to be exposed to substantial adverse effects including the risk of loss, injury or death involving seismic-related activity would be less than significant.

- b) Less than Significant with Mitigation Incorporated.** Construction of the proposed Project would require site preparation and clearing, excavation, stockpiling of soils, grading, tank erection and painting, and site restoration. In addition, the proposed Project would import approximately 472 cubic yards of soil as backfill for the proposed CWT. To prevent erosion associated with construction activities, the Authority would be required to obtain coverage under the Statewide Construction General Permit. Construction activity subject to this permit includes clearing, grading and disturbances to 1-acre or more, stockpiling and excavation. The Construction General Permit requires the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. The SWPPP would identify BMPs to control erosion and sedimentation issues. **Mitigation Measure GEO-1**, which would require compliance with the Construction General Permit by developing and implementing a SWPPP, would ensure issues related to soil erosion and loss of topsoil would be less than significant.

Mitigation Measure

GEO-1: Implement SWPPP. A Storm Water Pollution Prevention Plan (SWPPP), in compliance with the Statewide Construction General Permit, shall be prepared and implemented during construction activities to help prevent and minimize, to the maximum extent practicable, stormwater and non-stormwater pollution resulting from the construction activities. The SWPPP shall be prepared by a Qualified SWPPP Developer, and include erosion and sediment controls, and stormwater and non-stormwater Best Management Practices (BMPs).

- c-e) No impact.** Soils in the proposed Project area consist primarily of Olivenhain cobbly loam, 9 to 30 percent slopes (U.S. Department of Agriculture Natural Resources Conservation Service, 2019). Olivenhain loam soils are not considered unstable soils. Additionally, loamy soils lack the characteristics of expansive soils, soils that shrink and swell drastically during dry and wet conditions, as they contain a mix of sand, silt, and a smaller amount of clay. Expansive soils are characterized as largely clay soils (Science Direct, 2019). The proposed Project does not include the use of septic tanks or alternative waste disposal systems. Therefore, implementation of the proposed Project would have no impact due to unstable or expansive soils.

- f) **Less than Significant with Mitigation Incorporated.** The analysis of paleontological resource impacts is based on a paleontological records search and geologic map assessment prepared by the PaleoServices department of the San Diego Natural History Museum (SDNHM 2019). The records search indicates that while no recorded fossil specimens are known from the Project site itself, 16 scientifically important fossil locations occur within one mile of the Project site, and several of these occur within 0.25 miles. Geologic units within the proposed Project site are mapped as early to middle Pleistocene-age alluvial flood plain deposits, the early to middle Pleistocene-age Linda Vista Formation, and the middle Eocene-age Mission Valley Formation. However, previous paleontological mitigation work in the immediate vicinity of the Project site indicates that the Eocene deposits mapped as Mission Valley Formation also may include southern outcrops of the Friars Formation and mixed sequences of Sweetwater Formation and Mission Valley Formation strata. Mapped fossil localities are found in the Friars Formation and undifferentiated deposits of the Sweetwater and Mission Valley formations. Specimens from the Sweetwater Formation include fossilized impressions of freshwater plants, freshwater invertebrates, and freshwater vertebrates. Specimens from the Mission Valley formation include marine invertebrates and invertebrates. The Friars formation has produced terrestrial mammals and reptiles. Based on known fossil localities both within the vicinity of the Project site and from the same geologic formations in the region, the SDNHM assessment provides paleontological sensitivity ratings. The Pleistocene-age deposits, including the alluvial flood plain deposits and the Linda Vista Formation, are assigned a moderate paleontological sensitivity. The Eocene formations, including the Friars Formation, the Mission Valley Formation, and undifferentiated deposits of the Sweetwater and Mission Valley formations, with their rich suite of terrestrial, freshwater, and marine species, are assigned a high paleontological sensitivity.

Excavation or other ground disturbing activity that impacts undisturbed sediments anywhere within the Project site has the potential to expose significant vertebrate and invertebrate fossils, and impacts to such fossils could constitute a significant impact on the environment. **Mitigation Measures GEO-2** through **GEO-4** would ensure that impacts to paleontological resources would be less than significant.

Mitigation Measure

GEO-2: Worker Sensitivity Training. Prior to the start of ground disturbing activities, all construction personnel shall be trained to identify the types of paleontological resources that may be encountered during Project implementation. The training may be provided during the archaeological sensitivity training conducted pursuant to Mitigation Measure CUL-1. Documentation shall be retained demonstrating that all construction personnel attended the training.

GEO-3: Paleontological Monitoring. Paleontological resources monitoring shall be conducted for excavation activities occurring in previously undisturbed sediments within the Project site (i.e. CWT site). Monitors shall have the authority to temporarily halt or divert work away from exposed fossils of significance in order to recover the fossil

specimens. Monitors shall prepare daily logs detailing the types of activities and soils observed, and any discoveries.

GEO-4: Fossil Discovery. If personnel or workers discover any potential fossils during Project implementation, regardless of the depth of work or location, work at the discovery location shall cease in a 50-foot radius of the discovery until the Qualified Paleontologist has assessed the discovery, consulted with the Authority, and made recommendations as to the appropriate treatment.

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Greenhouse Gas Emissions

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------------------------|-------------------------------------|
| VIII. GREENHOUSE GAS EMISSIONS — | | | | |
| Would the project: | | | | |
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | <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 type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

Greenhouse gas emissions (GHG) have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to the significant cumulative impact of global climate change. Cumulative impacts are those that result from the combination of past, present, and probable future projects, producing related effects. The proper context for addressing GHG emissions is within an assessment of cumulative impacts because, although it is unlikely that a single project would contribute significantly to climate change, cumulative emissions from many projects could impact global GHG concentrations and the global climate system (County of San Diego, 2018).

The California Assembly Bill (AB) 32 established a comprehensive program to reduce GHG emissions from all sources in California. The bill required the California Air Resources Board (CARB) to develop regulations as well as market mechanisms to reduce the state's GHG emissions to 1990 levels by year 2020. This represents a 25 percent reduction statewide and included mandatory caps beginning in 2012 for significant emission sources.

The COSD adopted a Climate Action Plan (CAP) in 2018 pursuant to CEQA guidelines to allow certain projects a CEQA "streamlining" tool. The CAP describes the COSD's existing baseline and project emissions calculation methodologies for years 2020, 2030 and 2050, as well as the recommended reduction targets for horizon years 2020 and 2030. The CAP also describes specific GHG reduction strategies and how the COSD will implement the plan and monitor its effectiveness. A project that is found to be consistent with the CAP would result in less than significant GHG emissions and would not result in a cumulatively considerable GHG impact. It should be noted that the COSD will be revising its 2018 CAP and EIR in response to a June 12, 2020 Court of Appeal ruling.

The San Diego County Air Pollution Control District (APCD) has not adopted a threshold of significance for greenhouse gas (GHG) emissions from construction activities. Rather, the significance threshold considered in this document is based on a 900 metric tons of carbon dioxide equivalent per year (MT/yr CO₂e) conservative screening criteria established by the California Air Pollution Control Officers Association (CAPCOA). Modeling of air emissions was conducted for construction and operation of the proposed Project and evaluated in the *Air Quality* section. Operation of the proposed CWT would be automated and intermittent energy would be supplied by the local electrical grid. Air emission modeling outputs are provided in Appendix A.

- a) **Less than Significant.** The proposed Project would generate GHG emissions primarily during construction with the use of heavy-duty equipment. The APCD does not regulate mobile emissions as discussed in *Air Quality*. CARB has released multiple planning efforts to meet air quality standards, GHG emission reduction targets, petroleum consumption reduction, and reduced health risks from transportation emissions. The construction contractor would be responsible for maintaining company vehicles in accordance with CARB’s GHG reduction goals. A project’s incremental contribution to a cumulative GHG emissions effect would not be considered cumulative if it complies with the County’s Climate Action Plan (San Diego County, 2018). The County’s Climate Action Plan incorporates planning and data analysis for future growth anticipated by federal and state transportation agencies and air management districts. As described in *Air Quality*, the proposed Project would be in compliance with local and state planning documents for mobile air emissions sources. **Table 6** presents the maximum annual CO₂e emissions produced by the proposed Project as conservatively calculated in CalEEMod.

TABLE 6
PROPOSED PROJECT UNMITIGATED GHG EMISSIONS (MT/YR CO₂E)

| | GHG Emissions |
|----------------------------------|--------------------------|
| Maximum Annual Construction Year | 79.9 |
| Maximum Annual Operation Year | 102.2 |
| CAPCOA Significance Threshold | 900 |

The proposed Project emissions would not exceed the CAPCOA significance threshold, therefore overall contribution to atmospheric levels of GHGs would be less than significant.

- b) **No Impact.** The proposed Project would construct water storage infrastructure and ensure existing and future maximum day and fire flow demands are met. The proposed Project is designed to meet the needs identified in the Sweetwater Authority’s 2015 Water Distribution System Master Plan. The proposed Project does not pose any apparent conflicts with CARB recommended actions, like green building codes or water use efficiency. Further, maximum annual GHG emissions from the proposed Project were conservatively calculated at 102.2 MT/year CO₂e, which would be insignificant when compared to CAPCOA’s screening threshold and not generate emissions that could impair the state’s ability to implement AB 32. Based on the estimated emissions and nature of the design, the proposed Project is presumed to comply with the County’s CAP.

References

County of San Diego, 2018. Guidance for Determining Significance for Climate Change.
<https://www.sandiegocounty.gov/content/dam/sdc/pds/advance/cap/Guidelines-for-Determining-Significance-for-Climate-Change.pdf>

Hazards and Hazardous Materials

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------------------------|-------------------------------------|
| IX. HAZARDS AND HAZARDOUS MATERIALS — | | | | |
| Would the project: | | | | |
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | <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 or excessive noise for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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"/> |

Discussion

A hazardous material is any material that because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or environment. The proposed construction activities would involve transport, use, and disposal of hazardous materials such as solvents, oils, grease, and cleaning fluids.

Environmental regulatory database lists were reviewed to identify and locate properties with known hazardous substance contamination within the proposed Project area.

a-b) Less than Significant. The proposed construction activities would require equipment that use hazardous materials such as petroleum fuels and oil. During construction activities, hazardous materials could accidentally be spilled or otherwise released into the environment exposing construction workers, the public and/or the environment to potentially hazardous conditions. Construction activities that involve hazardous materials would be regulated by several agencies, including the California Environmental Protection Agency (CalEPA), Department of Transportation (DOT), California Division

of Occupational Safety and Health (Cal/OSHA), and the California Department of Toxic Substances Control (DTSC). Construction contractors would be required to implement BMPs for handling hazardous materials during construction activities, including following manufacturers' recommendations and regulatory requirements for use, storage, and disposal of chemical products and hazardous materials used in construction; avoiding overtopping construction equipment fuel tanks; routine maintenance of construction equipment; and properly disposing of discarded containers of fuels and other chemicals. Construction contractors would be required to implement safety measures in accordance with the General Industry Safety Orders of the California Code of Regulations (CCR). Compliance with applicable federal, state, and local standards is required; therefore, construction related impacts in regards to the transport, use, or disposal of hazardous materials or accidental release of hazardous materials would be considered less than significant.

Operation of the proposed Project would be automated, and while typical hazardous substances such as solvents, paint and or oil, may be used sporadically during maintenance activities of the CWT, the substances used would be nominal and accidental spills would be managed and cleaned as directed by federal, state and local regulations. Therefore, impacts would be less than significant.

- c-e) No Impact.** The Project area is not located within 0.25 mile of a school. The nearest school to the Project site is Sunnyside Elementary School located approximately 0.8 miles southwest of the Project site. The nearest airport is the John Nichol's Field Airport, a restricted private-use airport approximately 7 miles southeast from the Project site.

A review of the Department of Toxic Substances Control's (DTSC) Hazardous Waste and Substances List – Site Cleanup (Cortese List) indicates that identified hazardous material sites are not located within the Project area (DTSC, 2019). A review of the DTSC EnviroStor and the State Water Resources Control Board (SWRCB) GeoTracker online databases show that the Project area is not located on a historically hazardous site (SWRCB, 2019).

- f) Less than Significant.** Per the traffic study prepared for the proposed Project, impacts to traffic, including emergency responders, would be minimal. During construction of the proposed Project, the project would likely require a temporary lane closure within San Miguel Road. However, a Traffic Control Plan would be prepared and need to be approved by the COSD Traffic Engineer prior to initiating construction within the public Right of Way. The Traffic Control Plan would be enforced by the contractor and would identify alternative routes for emergency and evacuation plans, ways to minimize effects to existing vehicular traffic operations, and alternative routes for pedestrian and bicycles, if needed. Therefore, impacts would be less than significant.
- g) Less than Significant.** Construction activities could increase the potential for accidental wildfires. To minimize wildfire potential from construction activities, fire management techniques would be applied during construction and as deemed necessary by the

contractor and consistent with the requirements of the COSD and the Fire Authority Having Jurisdiction. Furthermore, the proposed Project area is not within a designated Wildfire Hazard area (Ready San Diego, 2019). However, a minimum of a 30-foot vegetation clearance around the tank would be established as a defensible space against fires, as already requested by the Bonita-Sunnyside Fire Protection District. Considering the low risk of wildfires, and lack of structures and vegetation that would expose people to a significant risk of loss, injury or death, impacts would be less than significant.

References

Department of Toxic Substances Control (DTSC), 2019. EnviroStor Data Management System. <https://www.envirostor.dtsc.ca.gov/public/>

State Water Resources Control Board (SWRCB), 2019. GeoTracker. <https://geotracker.waterboards.ca.gov/>

Ready San Diego, 2019. Wildfire Hazard Map. <https://www.readysandiego.org/wildfire-hazard-map/>

Hydrology and Water Quality

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------------------------|-------------------------------------|
| X. HYDROLOGY AND WATER QUALITY — Would the project: | | | | |
| a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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 type="checkbox"/> | <input checked="" 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 substantial erosion or siltation on- or off-site; | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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; or | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" 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 type="checkbox"/> | <input checked="" 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"/> |

Discussion

San Diego Region is defined as Region 9 by the RWQCB, and include approximately 3,900 square miles of surface area. The San Diego Region has 13 principal stream systems originating in the western highlands which flow to the Pacific Ocean. The region is divided into 11 major hydrologic units (HUs), 54 hydrologic areas (HAs), and 147 hydrologic subareas (HSAs). HUs are the entire watershed of one or more streams; HAs are major tributaries and/or major groundwater basins within the HU; and HSAs are major subdivisions of HAs including both water-bearing and nonwater-bearing formations. The RWQCB has designated Sweetwater Reservoir and its surrounding areas as being in the Sweetwater HU (Basin 9.00). This HU is a 230-square mile elongated strip that is traversed along its length by the Sweetwater River stretching from the eastern boundary of RWQCB Region 9 in the Laguna Mountains to San Diego Bay. The watershed has four major water bodies, the Sweetwater River, Sweetwater Reservoir, Loveland Reservoir, and San Diego Bay. The Sweetwater HU includes separate and fully functional HAs: Lower Sweetwater (9.10), Middle Sweetwater (9.20), and Upper Sweetwater (9.30) (RWQCB 2016). The Lower Sweetwater River is included on the 303(d) List of Impaired Waters for Enterococcus, Fecal Coliform, Phosphorus, Selenium, Total Dissolved Solids, Total Nitrogen as N and toxicity (State Water Resources Control Board [SWRCB] 2016).

Additionally, the Sweetwater Reservoir is listed on the 303(d) List of Impaired Waters for dissolved oxygen (SWRCB 2016).

Sweetwater Reservoir is a drinking water reservoir that receives water from the Sweetwater River watershed, as well as imported water from the San Diego County Water Authority, with the quality affected by upstream watershed development and activities. Surface and ground waters flowing into Sweetwater Reservoir are treated at the Robert A. Perdue Water Treatment Plant prior to delivery to its customers. The Authority also supplements its local water supply with treated water purchased from the San Diego County Water Authority.

The Sweetwater Reservoir Urban Runoff Diversion System (URDS) is located along the north side of the reservoir. The main purpose of the URDS is to minimize stormwater pollution into the reservoir resulting from upstream residential developments and industrial areas. Minimization of stormwater pollution is achieved mainly by capturing polluted runoff from the “first flush” and dry-season low flows. The system can also capture hazardous spills, preventing water pollution in the reservoir.

Improvements such as the proposed Project could affect the water quality of the Sweetwater Reservoir through sedimentation, runoff of hazardous substances, and/or waste. Section 402 of the federal Clean Water Act established the National Pollutant Discharge Elimination System (NPDES) to regulate discharges into navigable “waters of the U.S.” The SWRCB issues NPDES permits in the State of California, including the NPDES permit that ensures that construction sites are in compliance with the Clean Water Act. Construction projects disturbing one or more acres of soil are required to file for coverage under SWRCB Order No. 2009-0009-DWQ, NPDES General Permit No. CAS000002 for Discharges of Storm Water Runoff Associated with Construction Activity (Statewide Construction General Permit; CGP). To comply with the permit, the Authority or its contractor must file a complete and accurate Notice of Intent (NOI) with the SWRCB prior to construction. Compliance requires conformance with applicable BMPs and the preparation and implementation of a SWPPP and monitoring program. The SWPPP is a working document that is updated and modified throughout construction to detail any changes in implementation of BMPs, any noncompliance, and resolution thereof. Upon completion of construction, the permit holder must file a Notice of Termination with the SWRCB. The SWPPP must be retained on-site for 3 years after acceptance of the Notice of Termination.

- a) **Less than Significant with Mitigation Incorporated.** Construction of the proposed Project would involve excavation, trenching, and grading to install the CWT and associated water transmission infrastructure. Excavated and exposed soils would have the potential to erode and be transported down gradient areas, potentially resulting in water quality impacts. Additionally, stormwater runoff passing through the construction and staging sites has the potential to pick up construction-related pollutants. Since the proposed Project would disturb approximately 2 acres, the Authority’s construction contractor would be required to comply with the Statewide General Permit for Discharges of Storm Water Runoff Associated with Construction Activity, which requires the preparation and implementation of a SWPPP. Mitigation Measure GEO-1, which includes the preparation and implementation of a SWPPP, would be implemented and

would mitigate impacts to water quality from construction activities to less than significant levels.

Operation and maintenance of the proposed Project would involve periodic discharges from the CWT. A 12-inch discharge pipeline would extend approximately 500 feet in length to just above the Sweetwater Reservoir's ordinary high water mark of 239 feet amsl. As a project component, riprap or other dissipation mechanism would be installed at the pipeline terminus to reduce discharge velocities. To mitigate impacts from the periodic discharges of treated drinking water to the reservoir's water quality, and to ensure that the operation of the tank does not result in water quality violations, the Authority will adopt **Mitigation Measure HYD-1** requiring compliance with Drinking Water System Discharges Statewide General Permit. With implementation of mitigation measures GEO-1 and HYD-1, the proposed Project would not violate any water quality standards, pollute regulated waters, or be in violation of waste discharge requirements; impacts would be less than significant.

Mitigation Measures

HYD-1: Compliance with Drinking Water System Discharges Statewide General Permit. Discharges of treated drinking water from the Central Wheeler Tank into the Sweetwater Reservoir shall comply with Statewide General Permit for Drinking Water System Discharges to Waters of the U.S. The Authority shall be responsible for ensuring that the appropriate BMPs and monitoring and reporting requirements are followed. Each individual discharge must be logged and the BMPs shall be recorded and verified. Mandatory Permit BMPs include de-chlorination of the discharge water, and implementing sediment, erosion, and turbidity control as necessary.

- b) **No Impact.** The proposed CWT would not substantially interfere with groundwater recharge considering the small impervious footprint of the proposed CWT and support structures. Water provided to the CWT would come from the Robert A. Perdue Water Treatment Plant in Spring Valley. No impact would occur.
- c) **Less than Significant with Mitigation Incorporated.** The proposed Project would not alter the course of a stream or river as there are none in the vicinity. The proposed Project would temporarily disturb more than one acre and be subject to the Statewide General Permit for Discharges of Storm Water Runoff Associated with Construction Activity, requiring the Authority or the Authority's contractor, to comply with Mitigation Measure GEO-1 and prepare a SWPPP that would identify BMPs to be used throughout the course of construction to control erosion. Temporarily disturbed areas, however, would be restored and re-established, per SWPPP stabilization requirements. Other temporarily disturbed areas, such as the already paved roads, will be repaved. As such, the project would not result in substantial erosion or siltation on- or off-site. Installation of the CWT and 16-foot wide asphalt maintenance driveway around the CWT would create new impervious surfaces to the area. However, these surfaces would be built with drainage gradients of at least 2 percent to direct drainage away from the CWT. Because the

proposed Project would not substantially alter drainage patterns on the site or substantially increase impervious surfaces, impacts are considered less than significant.

- d) No Impact.** The proposed Project area is located within the Federal Emergency Management Act (FEMA) Flood Zone X, indicating a moderate to low risk for flooding (FEMA, 2019). However, when looking at the proposed elevation and location of the proposed tank in relation to the surrounding Sweetwater Reservoir and tributaries, the tank site is at a much higher elevation than the reservoir or tributaries and the possibilities of having flooding issues at the tank site are non-existent. The hillside to the west of the proposed CWT has a gentle slope and is not anticipated that it would contribute to flooding issues. Similarly, in the event of a seiche or a seiche wave in the Sweetwater Reservoir, the proposed CWT would not be impacted as the tank would be located at least 60 feet above the existing high-water mark. The proposed Project site is located approximately 12 miles away from the Pacific Ocean and would not be subject to the maximum force of a Pacific Ocean tsunami and would not risk release of pollutants due to inundation from a tsunami.

Considering that no housing structures are proposed, and that the proposed tank would be constructed at a higher elevation than the reservoir or tributaries, the potential for flooding in the area or exposure to other related water forces are considered a no impact.

- e) Less than Significant.** The proposed Project does not involve extraction of groundwater and complies with the Authority's Interim Groundwater Management Plan. The Authority's Interim Groundwater Management Plan will be superseded by a Groundwater Sustainability Plan (GSP) in accordance with California's Sustainable Groundwater Management Act. The proposed Project would also comply with the future GSP. Water drained during periodic maintenance of the proposed CWT would comply with mandated BMPs as outlined in the Authority's existing permit. In addition, BMPs established in the SWPPP during construction would also protect water quality of the Reservoir. Therefore, the proposed Project does not conflict with implementation of a water quality control plan or groundwater management plan and impacts would be less than significant.

References

- Federal Emergency Management Act (FEMA), 2019. FEMA Flood Map Service Center.
<https://msc.fema.gov/portal/home>
- San Diego State University, 2019. San Diego Bay Watersheds. Sweetwater Watershed.
<https://www.sdbay.sdsu.edu/education/sweetwater.php>
- Sweetwater Authority, 2018. Initial Study and Mitigated Negative Declaration. Sweetwater Dam and South Dike Improvements Project.
<https://www.sweetwater.org/DocumentCenter/View/1118/Draft-IS-MND---Sweetwater-Dam-and-South-Dike-Improvements>

Land Use and Planning

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------------------------|-------------------------------------|
| XI. LAND USE AND PLANNING — 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"/> |

Discussion

The physical division of an established community generally refers to the construction of features such as an interstate highway, railroad tracks, or permanent removal of a means of access, such as a local road or bridge that would impact mobility within an existing community or between a community and outlying area.

a-b) No Impact. The proposed facilities would be constructed within land owned by the Authority, and within existing utility corridors to connect to existing water transmission infrastructure along Summit Meadow and San Miguel Roads. The proposed water transmission pipelines would be underground, and operate in conjunction with the existing water transmission pipelines. Therefore, there would be no conflict with land use plans or policies adopted for avoiding an environmental effect, and the proposed CWT would not divide an established community.

References

Sweetwater Community Plan San Diego County General Plan, 2014:
https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Sweetwater_CP.pdf

Mineral Resources

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------------------------|-------------------------------------|
| XII. MINERAL RESOURCES — Would the project: | | | | |
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <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"/> |

Discussion

a-b) No Impact. The California Department of Conservation (DOC) classifies the regional significance of mineral resources in accordance with the California Surface Mining and Reclamation Act of 1975. The DOC designates Mineral Resources Zones (MRZs) that have regionally significant mineral deposits. Areas are classified on the basis of geologic factors, without regard to existing land use and land ownership. The areas are categorized into four Mineral Resource Zones (MRZs). Of the four categories, lands classified as MRZ-2 are of the greatest importance. Such areas are underlain by demonstrated mineral resources where geologic data indicate significant measured or indicated resources are present. The Project area is in an area defined by the DOC as a MRZ-3, which defines an area as containing known or inferred mineral occurrences of undetermined mineral resource significance (DOC 2017). No mineral resources have been identified within the proposed Project area. As a result, the proposed Project would not 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. Though there are aggregate alluvial deposits to the east and to the west of Sweetwater Reservoir, the Project site is not located within an area with mineral resources (California Department of Conservation 2017). Additionally, the proposed Project is a storage reservoir tank that would not reduce access to nor availability of mineral resources. Therefore, the Project would not result in the loss of availability of a known mineral resource, and no impacts would occur.

Further, the COSD General Plan does not identify the Project area as a mineral resource recovery site (County of San Diego 2011). Therefore, the implementation of the proposed project would not result in the loss of a locally important mineral resource recovery site. No impacts would occur.

References

- California Department of Conservation (DOC), 2017.
<http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorym>
- County of San Diego, 2011. County of San Diego General Plan, Conservation and Open Space Element.
<https://www.sandiegocounty.gov/content/dam/sdc/pds/gpupdate/docs/GP/ConservationandOpenSpace.pdf>.

Noise

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------------------------|-------------------------------------|
| XIII.NOISE — Would the project result in: | | | | |
| a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" 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"/> |

Discussion

Noise is typically defined as unwanted sound. The main characteristics of sound are intensity, frequency and duration. The A-weighted decibel (dB) is the typical measurement of sound intensity. Existing noise sources in the proposed Project area are primarily from traffic concentrated along State Highways 125 with an average equivalent A-weighted range of 60 to 75 dBA over a 24-hour period (County of San Diego, General Plan, Noise Element, 2011).

Construction equipment would generally include backhoes, excavators, dump trucks, concrete mixer, water truck, crane, bulldozer, steam or sheepsfoot roller, and plate compactor. **Table 7** provides estimated maximum dBA at 50 feet from the source of the construction equipment that would be used during installation of the proposed Project.

TABLE 7
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

| Construction Equipment | Estimated Usage Factor (%) | Noise Level (dBA, Lmax at 50 feet) |
|-------------------------------|-----------------------------------|--------------------------------------------|
| Air Compressor | 40% | 78 |
| Auger Drill Rig | 20% | 84 |
| Bore/Drill Rig | 20% | 79 |
| Compactor | 20% | 83 |
| Concrete Saw | 20% | 90 |
| Crane | 16% | 81 |
| Dump/Haul Truck | 40% | 76 |
| Excavator | 40% | 81 |
| Forklift | 10% | 75 |
| Other Equipment | 50% | 85 |
| Pump | 50% | 81 |
| Roller | 20% | 80 |
| Rubber Tired Dozer | 40% | 82 |
| Tractor/Loader/Backhoe | 25% | 80 |

SOURCE: Federal Transit Administration, 2018 ; FHWA 2006

Per Government Code Section 53091(e), “zoning ordinances [such as the noise ordinance] of a county or a city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water”. The project, as a water infrastructure project, is exempt from the Noise ordinance. However, since the proposed project is located in an unincorporated area of San Diego County, noise standards developed by COSD will be used to analyze the significance of noise related impacts from the project.

a) Less than Significant with Mitigation Incorporated.

Construction:

With Respect to construction activities, COSD determines significance of noise impacts via compliance with the COSD Noise Ordinance (County Code, Chapter 4, Section 36.409, 2014). The Noise Ordinance states that except for emergency work, construction equipment cannot exceed an average sound level of 75 dB for an eight-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of any occupied property where the noise is being received. The Federal Transit Administration (2018) provides estimates of construction noise emissions from commonly used equipment during road construction. The greatest noise-generating equipment that would be used during construction would generate intermittent noise of up to 85 dBA at 50 feet away (Table 3). Installation of the proposed Project water transmission mains would occur along the north side of San Miguel Road, approximately 75 feet away from residential property boundaries on the south side of the road. The use of heavy duty equipment could temporarily impact residences and recreational users of Summit Park. Given the type of equipment and distance to nearby sensitive receptors, the residences along San Miguel Road and the onsite campground playground could experience noise impacts of up to 81 dBA during construction equipment usage (Calculations are included as **Appendix E**). Implementation of **Mitigation Measure NOISE-1** would limit construction hours of operation, limited the number of days of construction, and require noise reduction features such that significant noise impacts would not occur. Considering the maximum length of water transmission pipeline would be approximately 1000 feet, and that noise generated during construction would be temporary and intermittent, implementation of **Mitigation Measure NOISE-1** would reduce impacts from construction noise to 75 dBA or less for all receptor. The impact would be less than significant.

Operation:

Once the pipeline and water tank are installed, there would be intermittent maintenance activities at the site resulting in a potential of up to 8 vehicle trips per day accessing the site, which would not noticeably increase existing ambient noise levels. A doubling of the traffic volume is generally required to result in a 3 dBA increase in traffic noise levels, which is considered a barely perceivable difference (Caltrans 2013). The addition of 8 vehicle trips per day would not result in the doubling of traffic volumes on area roadways. There would be no equipment operating along the pipeline and therefore the pipeline portion of the Project would not result in an increase in ambient noise levels. Electrical equipment associated with the operation of the water tank would be housed in

the project's ancillary buildings or the water tank itself. The enclosure of the equipment and the distance to nearby receptors (approximately 200 feet from the campgrounds and 1,900 feet from the nearest residences) would minimize impacts to nearby sensitive receptors to less than significant levels.

Mitigation Measure

NOISE-1: To reduce noise impacts due to construction, construction contractors shall implement the following measures:

- Construction activities shall be limited to between 7 a.m. and 7 p.m. Monday through Friday to avoid noise-sensitive hours of the day, unless special circumstances require work outside these hours. Construction activities shall be prohibited on weekends and holidays.
- The contractor shall ensure that all construction equipment, fixed or mobile, are equipped with properly operating and maintained noise shielding and muffling devices, consistent with manufacturers' standards. The contractor shall use muffler systems (e.g. absorptive mufflers) that provide a minimum reduction of 5 dBA compared to the same equipment without an installed muffler system, reducing maximum construction noise levels. The contractor shall keep documentation on-site demonstrating that the equipment has been maintained in accordance with the manufacturers' specifications. The contractor shall also keep documentation on-site verifying compliance with this measure.
- The contractor shall limit engine idling of construction equipment not actively in use (e.g. haul trucks, loaders, etc.) to a minimum of 95 feet from any boundary of the nearest sensitive receptors.
- Prior to commencement of construction activities, the Authority shall notify in writing adjacent residents and businesses near the various project sites, of proposed construction activities and the tentative schedule.

- b) **Less than Significant.** The effects of ground-borne vibration can include perceptible movement of floors in buildings, rattling of windows, shaking of items on shelves or hanging on walls, and low-frequency noise. Human response to vibration is not usually substantial unless the vibration exceeds 85 vibration velocity (V) dB long-term (Federal Transit Administration, 2018). At 85 VdB, vibrations are tolerable if infrequent. In addition to human annoyance, building damage can occur when vibration occurs when peak particle velocity (ppv) is greater than 0.12. Construction activities at the proposed Project site have the potential to generate low levels of ground-borne vibration from the operation of construction equipment. Ground-borne vibrations propagate through the ground and rapidly diminish in intensity with increasing distance from the source (Federal Transit Administration, 2018). No high-impact activities, such as pile driving or blasting, would be used during construction. The nearest offsite receptors to the proposed Project site are residences approximately 75 feet away along San Miguel Road and construction would generally be limited to 7 a.m. to 5 p.m., Monday through Friday, except on federal holidays. Given the type of construction activities, vibration levels at nearby residences along San Miguel could experience vibration impacts of up to 73 Vdb (0.02 ppv) which is less than the 85 Vdb human tolerance level and 0.12 ppv building

damage thresholds. Vibrations at the nearby campgrounds could reach up to 75.5 Vdb (0.024 ppv) when activities are within 60 feet of the campground building, which is also less than the appropriate thresholds (Calculations are included as Appendix E). Considering the type of equipment being used and the distance to sensitive receptors, vibrations from construction equipment would result in less than significant impacts from ground-borne vibration.

- c) **No Impact.** There are no public airports or private air strips located within two miles of the proposed Project facilities. Therefore, the Proposed Project facilities would have no impact on exposing people to excessive noise levels due to public airport use. No impact would occur.

References

California Department of Transportation (Caltrans), *Technical Noise Supplement (TeNS)*, September 2013.

County of San Diego, General Plan, Noise Element, 2011.

<https://www.sandiegocounty.gov/content/dam/sdc/pds/gpupdate/docs/GP/NoiseElement.pdf>.

Federal Highway Administration (FHWA), 2006. Roadway Construction Noise Model – RCNM and User Guide, January 2006. Available at:

https://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/. Accessed June 2020.

Federal Transit Administration, 2018.

https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

Population and Housing

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------|-------------------------------------|
| XIV. POPULATION AND HOUSING — Would the project: | | | | |
| a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <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"/> |

Discussion

- a-b) No Impact.** The proposed Project does not include construction of new homes or businesses that would result in a direct increase in population or create a substantial numbers of jobs. The Project is proposed on currently vacant land and therefore would not displace substantial numbers of existing people or housing.

Construction of the proposed Project would require approximately seven to two dozen workers on-site over a nine-month construction period, which would likely be filled by the existing labor force in the area. In line with the 2015 Master Plan efforts, the proposed Project is designed to meet structural stability requirements for seismic activity; daily storage requirements for maximum day demands and fire flow demands; and water pressure demands through 2040. Thus, the proposed Project is designed to satisfy existing and planned growth and does not indirectly induce substantial unplanned population growth.

References

Sweetwater Community Plan San Diego County General Plan, 2014:

https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Sweetwater_CP.pdf

Public Services

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------|-------------------------------------|
| XV. PUBLIC SERVICES — | | | | |
| a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services: | | | | |
| i) Fire protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| ii) Police protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| iii) Schools? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| iv) Parks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| v) Other public facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

- a) i-v) **No Impact.** The proposed Project would construct and operate the proposed CWT and water conveyance pipelines to meet daily storage requirements for maximum day, fire flow and water pressure demands through 2040. The proposed water transmission pipelines would connect to existing infrastructure. Construction of the proposed Project would require approximately seven to two dozen workers on-site over a nine-month construction period and would not require new permanent staff for operation and maintenance of proposed facilities. The proposed Project would not introduce new residents that would directly increase the COSD's population, and thus the Project would result in no increase in the demand for public services.

References

Sweetwater Community Plan San Diego County General Plan, 2014:

https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Sweetwater_CP.pdf

Recreation

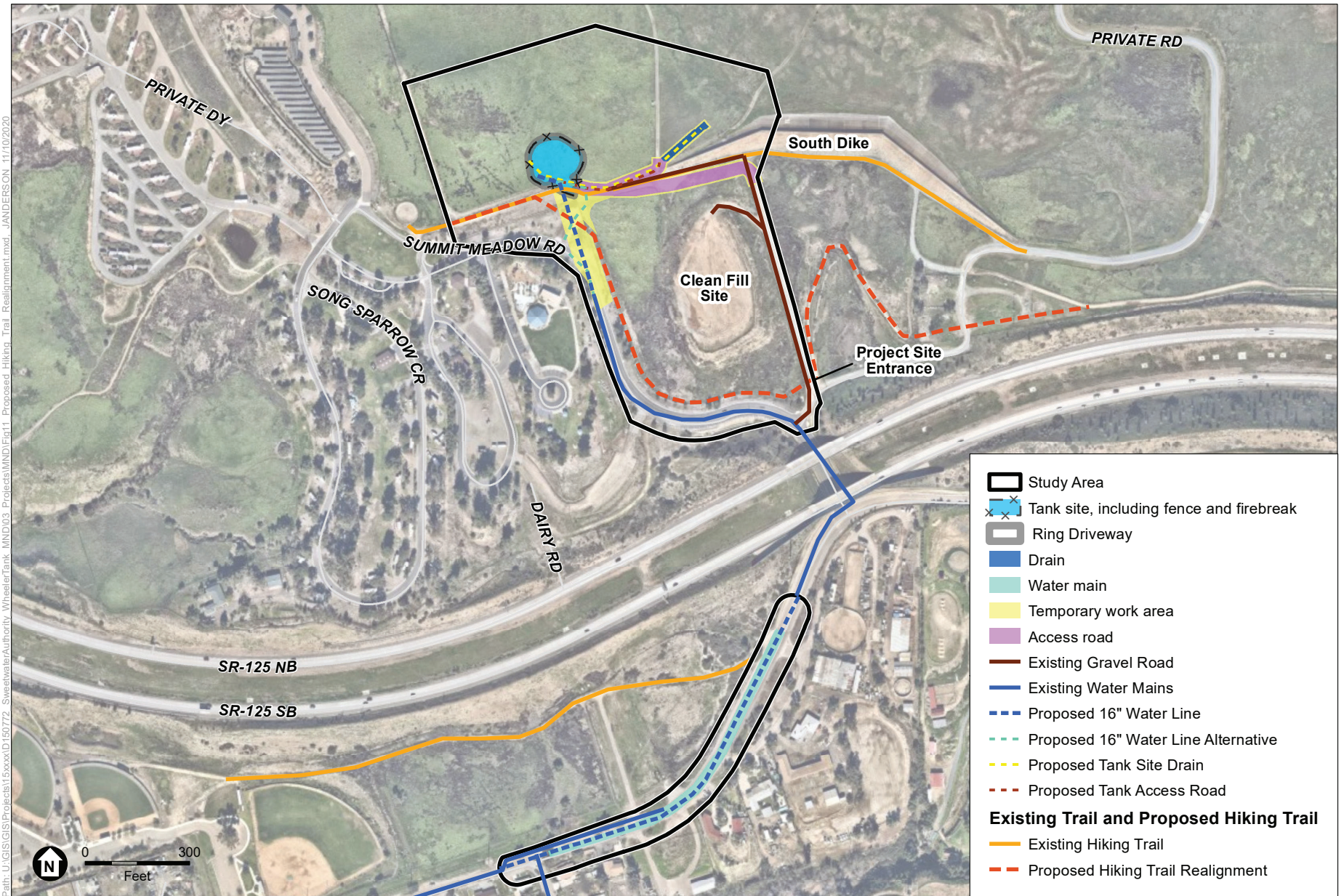
| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
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| XVI. RECREATION — | | | | |
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Discussion

Sweetwater Reservoir provides opportunities for limited recreation, consisting of shoreline fishing on the Sweetwater Reservoir Shoreline Fishing Program (Fishing Program). In addition to the fishing opportunities, the Fishing Program has a small trail network that is open to the public when the Fishing Program is open (Saturday-Monday).

The Sweetwater Reservoir Riding and Hiking Trail (R&H Trail) is located within the proposed Project area (just south of the CWT site). The R&H Trail is a COSD trail operated through a revocable license agreement between COSD and the Authority. The R&H Trail is nearly five miles long and runs from the Summit Park to the west, along the south side of Sweetwater Reservoir, and ultimately connects to trails in the San Diego National Wildlife Refuge, to the east. In the vicinity of the CWT site, there is a trailhead at Summit Park and a second trailhead off of San Miguel Road, adjacent to the vehicular access gate for the Fishing Program. During planning for the Sweetwater Dam and South Dike Improvements Project (Sweetwater Authority, 2018), the Authority identified the need to permanently reroute a portion of the R&H Trail that currently runs along the South Dike of the Reservoir (**Figure 11**). The realigned trail would meander south of the proposed Project area, outside the fenced area for the tank and construction zone of the Clean Fill Site, and reconnect to the existing trail at the Fishing Program vehicular access gate. This trail realignment, while approved by the Authority Board of Directors on March 27, 2013 has not been constructed as of the day of the preparation of this Initial Study Checklist. It is anticipated that the permanent realignment of the R&H Trail would occur upon conclusion of easement negotiations between COSD and the Authority, which may be completed before (as part of the Sweetwater Dam and South Dike Improvements Project) or during the implementation of this Project.

Other parks and recreational facilities that are located within the local vicinity of the Project area include the Bonita Golf Course, San Diego National Wildlife Refuge, Bonita Long Canyon Park, Boone Neighborhood Park, Skyview Park, Sweetwater Lane Community Park, Lomita Park, Bay Terraces Community Park and local hiking/riding trails (County of San Diego 2019).



SOURCE: Digital Globe 2017; ESA 2018; Sweetwater Authority 2018

Central-Wheeler Tank and System Improvement

Figure 11
Existing Trail and Proposed Hiking Trail Realignment

- a) **Less than Significant.** Construction of the proposed Project facilities would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. The Project is a water infrastructure project and does not promote recreational opportunities in the vicinity nor would it result in the gathering of more people in the project area or its vicinity. Therefore, the proposed Project would have less than significant impacts to existing and surrounding recreational facilities, including fishing program, Summit Park, and recreational trails.
- b) **Less than Significant with Mitigation Incorporated.** Construction of the proposed Project would temporarily impact access or use of a small portion of the existing or relocated R&H Trail and would impact access to a small portion of the currently available shoreline used by fishing enthusiasts. The R&H Trail would be rerouted as discussed above and as already approved by the Authority's Governing Board as part of the Sweetwater Dam and South Dike Improvements Project. During construction of the proposed CWT, the trail system would remain open but users would follow the alternate alignment, away from the construction zone. The Authority would notify the public, COSD, and stakeholders in advance of the construction date, post signage as necessary directing trail users to use the realigned portion of the trail, and establish a construction safety zone. Similarly, construction of the water main would temporarily impact egress and ingress from the Summit Park. However, these construction activities would not impact campgrounds, the playground, or other areas used by recreationists. Impact would be temporal in nature.

The portion of the Fishing Program located west of the South Dike would be temporarily unavailable for recreationists. However, the shoreline of the Fishing Program is approximately 2.5 miles long, and only a relatively small section of the Fishing Program shoreline would be temporarily impacted.

Other than the already approved rerouting of the R&H Trail, the proposed Project does not involve the construction of new recreational facilities or expansion of any existing recreational facilities. To the extent allowable, the recreational uses of these facilities would remain open during construction. In order to ensure public safety and access, as feasible, the Authority would implement **Mitigation Measure REC-1**, which requires installing fencing and signage around the construction area.

Mitigation Measure

REC-1: Prior to construction, Sweetwater Authority shall install fencing and signage to secure the construction sites and to provide detours to temporary closed trails and fishing areas. The following actions shall be implemented:

- Install construction fencing and signs to keep trail users and anglers out of all construction areas;

- Establish and maintain temporary trail detours during construction activities, as necessary, in coordination with COSD Parks and Recreation staff;
- Restrict construction vehicle speeds to 10 miles per hour when driving on the trail or trail crossings, and require that construction vehicles come to a complete stop when trail users are encountered;
- Maintain access to the Fishing Program to the greatest extent possible while maintaining construction site safety.

References

County of San Diego, 2019. Find a Park.

<http://www.sdparks.org/content/sdparks/en/parklist.html>,

Sweetwater Authority, 2018. Sweetwater Dam and South Dike Improvements Project Initial Study and Mitigated Negative Declaration.

<https://www.sweetwater.org/DocumentCenter/View/1118/Draft-IS-MND---Sweetwater-Dam-and-South-Dike-Improvements>

Transportation

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------|-------------------------------------|
| XVII. TRANSPORTATION — Would the project: | | | | |
| a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

The proposed Project is located in the unincorporated community of Sunnyside in San Diego County, California, just east of the unincorporated community of Bonita, approximately 9 miles east from downtown San Diego, and 6 miles northeast of downtown Chula Vista. The closest highway to the proposed Project site is State Route (SR) 125. Existing roadways in the vicinity of the proposed Project include San Miguel Road, a two-lane Non-Mobility Local Public Road in San Diego County. East of Proctor Valley Road, the land use on the south side is mostly residential. Curb, gutter and sidewalks are not provided. Parking is permitted intermittently. An unpaved path is provided along Summit Meadow Road.

Summit Meadow Road is also a two-lane Non-Mobility Local Public Road in San Diego County. Summit Meadow Road provides access to the Summit Park with camping facilities. Curb and gutter are provided, but sidewalks are not provided.

Proctor Valley Road is a two-lane Non-Mobility Local Public Road in COSD. Curb, gutter and sidewalk are not provided.

San Miguel Ranch Road is a four-lane divided road and is designated as a Class I Collector in the City of Chula Vista Mobility Element. Curb, gutter and sidewalks are provided.

The primary travel routes to the proposed Project site would be from SR-125 to either Paradise Valley Road exit or San Miguel Ranch Road exit, or from SR-54 through Bonita. Access within the Project boundary for construction equipment and workers would be through the existing maintenance road network located within the Sweetwater Reservoir property. To access the tank, a road segment would be added to the existing maintenance road network.

Average daily traffic volumes were conducted on February 12, 2019. Manual hand counts at the study area intersections, including bicycle and pedestrian counts, were conducted on February 12, 2019 (Appendix F, Transportation Impact Analysis). Results of the traffic study indicate the proposed Project would not negatively impact circulation in the proposed Project area.

- a) **Less than Significant.** The proposed Project construction corridor along San Miguel and Summit Meadow Roads is wide enough to accommodate the trench and to allow for secondary staging and vehicle access. Primary staging for the proposed Project would occur within the Clean Fill Site. During construction, the contractor may also choose secondary staging locations along Summit Meadow and San Miguel Roads within already disturbed areas. The Authority's contractor would be required to develop and submit a site access plan for review and approval by the Authority.

During construction along San Miguel and Summit Meadow Road, temporary closures of the bike land and sidewalks may be required. As a result, traffic control would be necessary during water main construction within the roadways. A Traffic Control Plan for the proposed Project would be prepared by the contractor and coordinated with the COSD. With implementation of a Traffic Control Plan, the proposed Project would not conflict with a program plan, ordinance or policy addressing the circulation system or bicycle and pedestrian facilities.

- b) **Less than Significant.** In accordance with SB 743, *CEQA Guidelines* section 15064.3, subdivision (b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the *CEQA Guidelines* criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas and shift the focus from driver delay to reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses. Vehicle miles traveled, or VMT, is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person. Section 15064.3 of the *CEQA Guidelines* suggests that the analysis of VMT impacts applies mainly to land use and transportation projects, and not water infrastructure projects. Furthermore, projects that generate or attract fewer than 110 operational trips per day would generally be exempt from further consideration with respect to VMT. Since the proposed Project is neither a land use nor a transportation project, and would generate approximately 2 to 3 operational trips per week, impacts with respect to VMT would be less than significant.
- c) **No Impact.** The proposed Project would not involve new facilities that would create geometric hazards as water transmission mains would be buried and the proposed CWT would be located within Authority land. Access to the CWT would be granted by existing maintenance roads and the proposed maintenance and access network around the tank.
- d) **Less than Significant.** Construction of the proposed Project would not substantially increase traffic levels or travel times on the surrounding circulation systems, as construction trips would be generated by trucks bringing materials to and from the construction sites and daily construction worker vehicle trips. However, while construction of the proposed Project would not significantly increase the amount of trucks and vehicles on the local and regional circulation systems, construction activities within roadways would require the potential for partial road closures, which could interfere with emergency access. In order to reduce impacts to emergency access during construction of the proposed Project, the Authority's contractor would be required to

prepare a Traffic Control Plan. The Traffic Control Plan would be coordinated with the local emergency responders, which include fire departments, police departments, and ambulances that have jurisdiction within the Project area. Therefore, impacts would be less than significant.

Once constructed, the transmission pipeline connecting the water storage tank to the existing Authority's infrastructure would be contained entirely underground and the water storage tank would be located within land owned by the Authority. These facilities would not interfere with emergency access.

References

Linscott Law & Greenspan Engineers-Transportation Impact Analysis-Central-Wheeler Tank and System Improvements Project, Sweetwater Authority, California October, 2019

Sweetwater Community Plan San Diego County General Plan, 2014:

https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Sweetwater_CP.pdf

Tribal Cultural Resources

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------|--------------------------|
| XVIII. TRIBAL CULTURAL RESOURCES — | | | | |
| a) 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: | | | | |
| i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Discussion

Pursuant to Public Resources Code Section 21080.3.1 (AB 52), lead agencies are required to notify the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notification of projects within the agency's jurisdiction. However, the Authority has not received a request from a California Native American tribe pursuant to AB 52 and related PRC sections. Still, the Authority conducted outreach to the tribes identified by the NAHC, as described below.

The NAHC was contacted on January 9, 2019, to request a search of the Sacred Lands File (SLF) for the Project area. The response from the NAHC, dated January 11, 2019, indicated positive results, meaning that resources on the SLF do occur within the vicinity of the Project site. No details on the resources were provided by the NAHC, but the NAHC recommended that the Kwaaymii Laguna Band of Mission Indians and the Kumeyaay Cultural Repatriation Committee be consulted regarding the resources. The Authority sent letters to the Native American contacts identified by the NAHC. The letters, dated August 30, 2019, described the Project, summarized the cultural resource studies conducted to date, and requested any information the tribes might wish to share. In addition, ESA staff reached out to the Kumeyaay Cultural Repatriation Committee by phone on August 30, 2019. One response was received by the Authority. By letter dated September 24, 2019, Mr. Ray Teran of the Viejas Band of Kumeyaay Indians (Viejas) indicated that the proposed Project area has cultural significance or ties to Viejas, and requested that a Kumeyaay Cultural Monitor be on site for ground disturbing activity. The Authority has agreed to include such mitigation measure to ensure impacts to cultural and tribal resources are less than significant (see mitigation measure CR-2).

- a i) Less than Significant with Mitigation Incorporated.** No tribal cultural resources were identified as a result of the Native American outreach conducted the Authority. Therefore, no tribal cultural resources that are listed in or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k) would be impacted by project implementation. No impact would occur.

Although no tribal cultural resources were identified as a result of the outreach, Mr. Ray Teran of the Viejas Band of Kumeyaay Indians mentioned in his letter that that the project site has cultural significance or ties to the Viejas Band of Kumeyaay Indians and requested that a Kumeyaay Cultural Monitor be on site for ground disturbing activities to inform of any new developments, such as inadvertent discovery of cultural artifacts, cremation sites, or human remains. To ensure that this request is met, the mitigation measure CR-2 (see *Section V. Cultural Resources*), which includes archaeological and Native American monitors be present for all project-related ground disturbing activities, will be implemented.

- a ii) Less than Significant with Mitigation Incorporated.** As noted above under Section 2.18 (a.i), no tribal cultural resources were identified as a result of the Native American outreach conducted by the Authority. Therefore, no tribal cultural resources that have been 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 PRC Section 5024.1, would be impacted by project implementation. No impact would occur.

Although no tribal cultural resources were identified as a result of the outreach, Mr. Ray Teran of the Viejas Band of Kumeyaay Indians mentioned in his letter that that the project site has cultural significance or ties to the Viejas Band of Kumeyaay Indians and requested that a Kumeyaay Cultural Monitor be on site for ground disturbing activities to inform of any new developments, such as inadvertent discovery of cultural artifacts, cremation sites, or human remains. To ensure that this request is met, the mitigation measure CR-2 (see *Section V. Cultural Resources*), which includes archaeological and Native American monitors be present for all project-related ground disturbing activities, will be implemented.

References

Viejas Band of Kumeyaay Indians AB 52 response letter, 2019.

Utilities and Service Systems

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------------------------|-------------------------------------|
| XIX. UTILITIES AND SERVICE SYSTEMS — | | | | |
| Would the project: | | | | |
| a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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 adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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 management and reduction statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

- a) **Less than Significant.** The proposed Project is a water utilities project and its main purpose is to construct a water tank (CWT) and water mains, as described in the project description. Other minor water appurtenances, such as blow off valves, would also be installed, but their construction would not result in a significant impact.

Construction of the proposed Project would require some water for dust control, which would be provided by imported water trucks. Wastewater generated during construction of the proposed Project would be minimal, consisting of portable toilet waste generated by construction workers. Wastewater generated during construction would be collected within portable toilet facilities. All wastewater generated in portable toilets would be collected by a permitted portable toilet waste hauler and appropriately disposed of at an identified liquid-disposal station. As required by State and local laws, the Authority would be required to identify existing underground utilities with the potential to be impacted or need to be relocated due to implementation of the proposed Project prior to the start of construction. Therefore, through implementation of State and local laws, and proper disposal of wastewater generated during construction, impacts would be less than significant. No impact to wastewater treatment, storm drainage, or telecommunication facilities are anticipated to occur as result of the project.

Currently, customers served by the Authority in the vicinity of San Miguel Road (see Figure 2) experience low water pressure as they are served by the gravity pressure zone with a water pressure ranging from 30 to 50 pounds per square inch (psi). Ideal water

pressure is within the range of 50 to 60 psi. The proposed Project would convert this gravity pressure zone into the Central-Wheeler pressure zone, resulting in an increase of water pressure by approximately 25 psi within this specific area. Properties affected by this pressure change include approximately 185 residential homes, an elementary school, a baseball little league field, and a currently proposed COSD bike park. While this pressure change is considered an improvement in the water system, pressure reducing valves (PRVs) would be installed at the affected properties to prevent potential damage to existing plumbing resulting from the pressure change. Prior to the installation of PRVs, the Authority would notify owners and coordinate installation. Therefore, the project would not result in the construction or reconstruction of water facilities which could cause significant environmental effects.

- b) **No Impact.** The project would store water to ensure water supply is accommodated in coming years with forecasted population growth in the project area. The project would not have an adverse impact on water supply availability. No impact would occur.
- c) **Less than Significant.** Wastewater generated during construction of the proposed Project would be minimal and would be collected in portable toilets. The toilets would be collected by a permitted portable toilet waste hauler and appropriately disposed of at an identified liquid-disposal station. The proposed Project includes the construction of a water storage tank and associated pipelines and would not require wastewater treatment. Therefore, the proposed Project would not impact the San Diego County Sanitation District's capacity and impacts would be considered less than significant.
- d-e) **Less than Significant.** The waste generated during construction of the proposed Project would mainly consist of soil disposal as well as general construction debris and worker personal waste. Deleterious materials such as concrete, asphalt, and construction materials accrued during construction would be removed and disposed of off-site. It is anticipated that no more than 7,500 cubic feet of deleterious materials would be disposed off-site. Excavated soils for the proposed water tank would be placed at the Clean Fill because those soils are not suitable for foundation support. The construction contractor would be required to dispose of solid waste in accordance with local solid waste disposal requirements. In compliance with the California Integrated Waste Management Act of 1989 and the California Green Building Code, the proposed Project would be required to divert 50 percent of its construction waste from landfills. The remaining construction solid waste would be taken to a nearby landfill to be determined by the construction contractor. The closest landfill to the proposed Project would be the Otay Landfill, which is located in the community of Otay Mesa approximately 10 miles south from the Project site. Otay Landfill has a permitted throughput of 6,700 tons per day, and has a remaining capacity, as of 2016, of 21,194,000 cubic yards (CalRecycle 2020). The site accepts all forms of waste such as mixed municipal, construction/demolition, industrial and inert waste. The landfill's cease operation date is anticipated to be in the year 2030. Therefore, the landfill would have sufficient capacity to accommodate the proposed Project's disposal needs. Operation of the proposed Project would not generate minimal waste. Therefore, impacts would be less than significant.

References

CalRecycle. 2020. Facility/Site Activity Details: Otay Landfill. Available at
<https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1790?siteID=2863>

Wildfire

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------------------------|-------------------------------------|
| XX. WILDFIRE — If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: | | | | |
| a) Substantially impair an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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 type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

- a) **Less than Significant.** The proposed Project is located within Authority property and involves the installation of a 0.8 MG water storage tank to meet existing and future demand for adequate fire flow and maximum day demand. Water transmission facilities would be installed to connect the tank to existing water mains along San Miguel and Summit Meadow Roads. Construction of the proposed tank would not require construction activities within the public rights-of-way. The construction of the water transmission pipelines would be with the public rights-of-way and could result in increased traffic due to construction activities. However, the implementation of a Traffic Control Plan would ensure there would be no interference with emergency response and evacuation plans. After construction, traffic would return to pre-project conditions and there would be no impairment of any emergency response plan or evacuation routes. Impacts would be considered less than significant with the implementation of a Traffic Control Plan.
- b) **Less than Significant.** The proposed Project area is not within a designated Wildfire Hazard area (Ready San Diego, 2019). However, the Authority would maintain a minimum of a 30-foot vegetation clearance around the tank as a defensible space area, as required by the Bonita-Sunnyside Fire Protection District. Considering the low risk of wildfires, and lack of structures and vegetation that could generate a wildfire, implementation of the proposed Project would not result in impacts related to wildfire.
- c) **Less than Significant.** As discussed above, the Authority would maintain a minimum of a 30-foot vegetation clearance around the tank as a defensible space area, as required by the Bonita-Sunnyside Fire Protection District. Considering the low risk of wildfires, and lack of structures and vegetation that could generate a wildfire, implementation of the proposed Project would not result in impacts related to wildfire.

- d) **No Impact.** The proposed Project is located within Authority property and involves the installation of a 0.8 MG water storage tank to meet existing and future demand for adequate fire flow and maximum day demand. The Project does not include any habitable structures. Further, the proposed Project would not change the drainage pattern of the surrounding area and in the event of a fire the Project would not exacerbate downslope or downstream risk of flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes or slope instability. As such, no impact would occur

References

Ready San Diego, 2019. Wildfire Hazard Map. <https://www.readysandiego.org/wildfire-hazard-map/>

Mandatory Findings of Significance

| <i>Issues (and Supporting Information Sources):</i> | <i>Potentially Significant Impact</i> | <i>Less Than Significant with Mitigation Incorporated</i> | <i>Less Than Significant Impact</i> | <i>No Impact</i> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------------------------|--------------------------|
| XXI. MANDATORY FINDINGS OF SIGNIFICANCE | | | | |
| a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Discussion

- a) **Less than Significant with Mitigation Incorporated.** Construction of the proposed Project has the potential to effect state and federally listed species, as well as nesting and foraging activities for common avian species protected under the Migratory Bird Treaty Act. However, implementation of **Mitigation Measures BIO-1** through **BIO-4** would ensure that impacts to biological resources are mitigated to a less than significant level.

The Proposed Project area is considered sensitive for the presence of subsurface archaeological deposits based on proximity to and number of known prehistoric sites within a 0.5-mile radius, and potential underlying paleontological resources based on the underlying geologic formation of the proposed Project area. Implementation of **Mitigation Measures CR-1** through **CR-3** and **GEO-1** through **GEO-4** would ensure impacts to archaeological resources and paleontological resources are mitigated to a less than significant level.

Mitigation Measures

Implement **Mitigation Measures BIO-1** through **BIO-4**, **CR-1** through **CR-3**, and **GEO-1** through **GEO-4**.

- b) **Less Than Significant with Mitigation Incorporated.** A cumulative impact could occur if the proposed Project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present, and reasonably foreseeable future projects for each resource area. No direct significant impacts were identified for the proposed Project that could not be mitigated to a less than significant level. However, when combined with other projects within the vicinity, the proposed Project may contribute to a cumulative impact. However, the project's contribution would not be cumulatively considerable since the construction efforts would be short term, and the proposed Project would be compatible with surrounding land uses and would not add significant traffic, air emissions, or noise to the area.

Construction of the proposed Project would involve the construction and operation of a water storage tank in close proximity to where Authority is constructing improvements to the South Dike of the Reservoir. However, construction for the South Dike project is not anticipated to occur simultaneously or even consecutive to the proposed Project. Implementation of mitigation measures during construction of both projects are expected to reduce impacts to non-significant levels and therefore, would not be cumulatively considerable.

Mitigation Measures

Implement **Mitigation Measures BIO-1 through BIO-4, CR-1 through CR-3, and GEO-1 through GEO-4, HYD-1, NOISE-1 and REC-1.**

- c) **Less Than Significant with Mitigation Incorporated.** Based on the analysis of the Project's impacts in the Responses I thru XX, there is no indication that this Project could result in substantial adverse effects on human beings. While there would be a variety of effects during construction related to biological resources, cultural and paleontological resources, hydrology, noise and recreational, these impacts would be less than significant based on compliance with applicable regulatory requirements and mitigation measures, where applicable. The Project would not have any long-term impacts. With implementation of mitigation measures included in this IS/MND, the proposed Project would not result in substantial adverse effects to humans, either directly or indirectly.

Mitigation Measures

Implement **Mitigation Measures BIO-1 through BIO-4, CR-1 through CR-3, and GEO-1 through GEO-4, HYD-1, NOISE-1 and REC-1.**

Appendix A
**Central Wheeler Tank
Construction Emissions
Modeling Output**

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

Sweetwater CWT CalEEMod

San Diego Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|------------------------|------|----------|-------------|--------------------|------------|
| General Light Industry | 9.00 | 1000sqft | 0.21 | 9,000.00 | 0 |
| Other Asphalt Surfaces | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| General Light Industry | 4.43 | 1000sqft | 0.10 | 4,430.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|---------------------------------|--------------------------|---------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.6 | Precipitation Freq (Days) | 40 |
| Climate Zone | 10 | | | Operational Year | 2020 |
| Utility Company | San Diego Gas & Electric | | | | |
| CO2 Intensity (lb/MW hr) | 720.49 | CH4 Intensity (lb/MW hr) | 0.029 | N2O Intensity (lb/MW hr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tank retaining wall slab will be 9000 sq ft; assumed general light industry

Road extension of 400 ft L x 20 ft W; assumed other asphalt surfaces

Piping extension, total of 2215 ft L x 2 ft W (assumed); assumed general light industry

Construction Phase - Construction would take place for approximately nine months, from October 2019 through July 2020

Grading - 2400 cubic yards of material imported.

Vehicle Trips - There will be 10 trips per year for O&M; proposed trip #s are very conservative.

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

| Table Name | Column Name | Default Value | New Value |
|----------------------|---------------------|---------------|------------|
| tblConstructionPhase | NumDays | 5.00 | 10.00 |
| tblConstructionPhase | NumDays | 100.00 | 150.00 |
| tblConstructionPhase | NumDays | 2.00 | 15.00 |
| tblConstructionPhase | NumDays | 5.00 | 10.00 |
| tblConstructionPhase | NumDays | 1.00 | 15.00 |
| tblConstructionPhase | PhaseEndDate | 3/19/2020 | 7/20/2020 |
| tblConstructionPhase | PhaseEndDate | 3/5/2020 | 6/22/2020 |
| tblConstructionPhase | PhaseEndDate | 10/17/2019 | 11/25/2019 |
| tblConstructionPhase | PhaseEndDate | 3/12/2020 | 7/6/2020 |
| tblConstructionPhase | PhaseEndDate | 10/15/2019 | 11/4/2019 |
| tblConstructionPhase | PhaseStartDate | 3/13/2020 | 7/7/2020 |
| tblConstructionPhase | PhaseStartDate | 10/18/2019 | 11/26/2019 |
| tblConstructionPhase | PhaseStartDate | 10/16/2019 | 11/5/2019 |
| tblConstructionPhase | PhaseStartDate | 3/6/2020 | 6/23/2020 |
| tblGrading | AcresOfGrading | 7.50 | 0.50 |
| tblGrading | MaterialImported | 0.00 | 2,400.00 |
| tblGrading | MaterialSiltContent | 6.90 | 4.30 |
| tblGrading | MaterialSiltContent | 6.90 | 4.30 |
| tblGrading | MeanVehicleSpeed | 7.10 | 40.00 |
| tblGrading | MeanVehicleSpeed | 7.10 | 40.00 |
| tblVehicleTrips | ST_TR | 1.32 | 0.50 |
| tblVehicleTrips | SU_TR | 0.68 | 0.50 |
| tblVehicleTrips | WD_TR | 6.97 | 0.50 |

2.0 Emissions Summary

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

2.1 Overall Construction

Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|---------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|---------|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2019 | 0.0324 | 0.3554 | 0.2452 | 5.3000e-004 | 0.0165 | 0.0176 | 0.0341 | 5.3400e-003 | 0.0164 | 0.0217 | 0.0000 | 48.1837 | 48.1837 | 0.0100 | 0.0000 | 48.4345 |
| 2020 | 0.2205 | 0.6235 | 0.5279 | 9.0000e-004 | 6.9200e-003 | 0.0351 | 0.0420 | 1.8800e-003 | 0.0324 | 0.0342 | 0.0000 | 79.3240 | 79.3240 | 0.0222 | 0.0000 | 79.8784 |
| Maximum | 0.2205 | 0.6235 | 0.5279 | 9.0000e-004 | 0.0165 | 0.0351 | 0.0420 | 5.3400e-003 | 0.0324 | 0.0342 | 0.0000 | 79.3240 | 79.3240 | 0.0222 | 0.0000 | 79.8784 |

Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|---------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|---------|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2019 | 0.0324 | 0.3554 | 0.2452 | 5.3000e-004 | 0.0165 | 0.0176 | 0.0341 | 5.3400e-003 | 0.0164 | 0.0217 | 0.0000 | 48.1837 | 48.1837 | 0.0100 | 0.0000 | 48.4344 |
| 2020 | 0.2205 | 0.6235 | 0.5279 | 9.0000e-004 | 6.9200e-003 | 0.0351 | 0.0420 | 1.8800e-003 | 0.0324 | 0.0342 | 0.0000 | 79.3240 | 79.3240 | 0.0222 | 0.0000 | 79.8784 |
| Maximum | 0.2205 | 0.6235 | 0.5279 | 9.0000e-004 | 0.0165 | 0.0351 | 0.0420 | 5.3400e-003 | 0.0324 | 0.0342 | 0.0000 | 79.3240 | 79.3240 | 0.0222 | 0.0000 | 79.8784 |

[illegible]

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|------------|----------------------------------------------|--------------------------------------------|
| 1 | 10-1-2019 | 12-31-2019 | 0.3859 | 0.3859 |
| 2 | 1-1-2020 | 3-31-2020 | 0.3329 | 0.3329 |
| 3 | 4-1-2020 | 6-30-2020 | 0.3267 | 0.3267 |
| 4 | 7-1-2020 | 9-30-2020 | 0.1856 | 0.1856 |
| | | Highest | 0.3859 | 0.3859 |

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 | 0.0688 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |
| Energy | 2.3500e-003 | 0.0214 | 0.0180 | 1.3000e-004 | | 1.6300e-003 | 1.6300e-003 | | 1.6300e-003 | 1.6300e-003 | 0.0000 | 67.8336 | 67.8336 | 2.2400e-003 | 8.0000e-004 | 68.1273 |
| Mobile | 2.2400e-003 | 0.0101 | 0.0271 | 9.0000e-005 | 7.3900e-003 | 9.0000e-005 | 7.4800e-003 | 1.9800e-003 | 8.0000e-005 | 2.0600e-003 | 0.0000 | 8.1642 | 8.1642 | 4.4000e-004 | 0.0000 | 8.1753 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 3.3798 | 0.0000 | 3.3798 | 0.1997 | 0.0000 | 8.3733 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.9853 | 13.2159 | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |
| Total | 0.0734 | 0.0315 | 0.0453 | 2.2000e-004 | 7.3900e-003 | 1.7200e-003 | 9.1100e-003 | 1.9800e-003 | 1.7100e-003 | 3.6900e-003 | 4.3651 | 89.2141 | 93.5792 | 0.3042 | 3.3000e-003 | 102.1657 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

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 | 0.0688 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |
| Energy | 2.3500e-003 | 0.0214 | 0.0180 | 1.3000e-004 | | 1.6300e-003 | 1.6300e-003 | | 1.6300e-003 | 1.6300e-003 | 0.0000 | 67.8336 | 67.8336 | 2.2400e-003 | 8.0000e-004 | 68.1273 |
| Mobile | 2.2400e-003 | 0.0101 | 0.0271 | 9.0000e-005 | 7.3900e-003 | 9.0000e-005 | 7.4800e-003 | 1.9800e-003 | 8.0000e-005 | 2.0600e-003 | 0.0000 | 8.1642 | 8.1642 | 4.4000e-004 | 0.0000 | 8.1753 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 3.3798 | 0.0000 | 3.3798 | 0.1997 | 0.0000 | 8.3733 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.9853 | 13.2159 | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |
| Total | 0.0734 | 0.0315 | 0.0453 | 2.2000e-004 | 7.3900e-003 | 1.7200e-003 | 9.1100e-003 | 1.9800e-003 | 1.7100e-003 | 3.6900e-003 | 4.3651 | 89.2141 | 93.5792 | 0.3042 | 3.3000e-003 | 102.1657 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

3.0 Construction Detail**Construction Phase**

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|--------------|-----------------------|-----------------------|------------|------------|---------------|----------|-------------------|
| 1 | Demolition | Demolition | 10/1/2019 | 10/14/2019 | 5 | 10 | |
| 2 | Site Preparation | Site Preparation | 10/15/2019 | 11/4/2019 | 5 | 15 | |
| 3 | Grading | Grading | 11/5/2019 | 11/25/2019 | 5 | 15 | |
| 4 | Building Construction | Building Construction | 11/26/2019 | 6/22/2020 | 5 | 150 | |
| 5 | Paving | Paving | 6/23/2020 | 7/6/2020 | 5 | 10 | |
| 6 | Architectural Coating | Architectural Coating | 7/7/2020 | 7/20/2020 | 5 | 10 | |

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 20,145; Non-Residential Outdoor: 6,715; Striped Parking Area: 480 (Architectural Coating – sqft)

OffRoad Equipment

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Cement and Mortar Mixers | 4 | 6.00 | 9 | 0.56 |
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Grading | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Building Construction | Cranes | 1 | 4.00 | 231 | 0.29 |
| Building Construction | Forklifts | 2 | 6.00 | 89 | 0.20 |
| Site Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Paving | Pavers | 1 | 7.00 | 130 | 0.42 |
| Paving | Rollers | 1 | 7.00 | 80 | 0.38 |
| Demolition | Rubber Tired Dozers | 1 | 1.00 | 247 | 0.40 |
| Grading | Rubber Tired Dozers | 1 | 1.00 | 247 | 0.40 |
| Building Construction | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Demolition | Tractors/Loaders/Backhoes | 2 | 6.00 | 97 | 0.37 |
| Grading | Tractors/Loaders/Backhoes | 2 | 6.00 | 97 | 0.37 |
| Paving | Tractors/Loaders/Backhoes | 1 | 7.00 | 97 | 0.37 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |

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 | 4 | 10.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 2 | 5.00 | 0.00 | 300.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 4 | 10.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 5 | 9.00 | 4.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 2.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.1 Mitigation Measures Construction**3.2 Demolition - 2019****Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 4.7700e-003 | 0.0430 | 0.0385 | 6.0000e-005 | | 2.6900e-003 | 2.6900e-003 | | 2.5600e-003 | 2.5600e-003 | 0.0000 | 5.2601 | 5.2601 | 1.0000e-003 | 0.0000 | 5.2852 |
| Total | 4.7700e-003 | 0.0430 | 0.0385 | 6.0000e-005 | | 2.6900e-003 | 2.6900e-003 | | 2.5600e-003 | 2.5600e-003 | 0.0000 | 5.2601 | 5.2601 | 1.0000e-003 | 0.0000 | 5.2852 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.2 Demolition - 2019**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 | 2.0000e-004 | 1.5000e-004 | 1.4600e-003 | 0.0000 | 4.0000e-004 | 0.0000 | 4.0000e-004 | 1.1000e-004 | 0.0000 | 1.1000e-004 | 0.0000 | 0.3743 | 0.3743 | 1.0000e-005 | 0.0000 | 0.3746 |
| Total | 2.0000e-004 | 1.5000e-004 | 1.4600e-003 | 0.0000 | 4.0000e-004 | 0.0000 | 4.0000e-004 | 1.1000e-004 | 0.0000 | 1.1000e-004 | 0.0000 | 0.3743 | 0.3743 | 1.0000e-005 | 0.0000 | 0.3746 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 4.7700e-003 | 0.0430 | 0.0385 | 6.0000e-005 | | 2.6900e-003 | 2.6900e-003 | | 2.5600e-003 | 2.5600e-003 | 0.0000 | 5.2601 | 5.2601 | 1.0000e-003 | 0.0000 | 5.2852 |
| Total | 4.7700e-003 | 0.0430 | 0.0385 | 6.0000e-005 | | 2.6900e-003 | 2.6900e-003 | | 2.5600e-003 | 2.5600e-003 | 0.0000 | 5.2601 | 5.2601 | 1.0000e-003 | 0.0000 | 5.2852 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.2 Demolition - 2019**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 | 2.0000e-004 | 1.5000e-004 | 1.4600e-003 | 0.0000 | 4.0000e-004 | 0.0000 | 4.0000e-004 | 1.1000e-004 | 0.0000 | 1.1000e-004 | 0.0000 | 0.3743 | 0.3743 | 1.0000e-005 | 0.0000 | 0.3746 |
| Total | 2.0000e-004 | 1.5000e-004 | 1.4600e-003 | 0.0000 | 4.0000e-004 | 0.0000 | 4.0000e-004 | 1.1000e-004 | 0.0000 | 1.1000e-004 | 0.0000 | 0.3743 | 0.3743 | 1.0000e-005 | 0.0000 | 0.3746 |

3.3 Site Preparation - 2019**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 | | | | | 8.5800e-003 | 0.0000 | 8.5800e-003 | 2.1800e-003 | 0.0000 | 2.1800e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.4000e-003 | 0.0669 | 0.0311 | 7.0000e-005 | | 2.7500e-003 | 2.7500e-003 | | 2.5300e-003 | 2.5300e-003 | 0.0000 | 6.5669 | 6.5669 | 2.0800e-003 | 0.0000 | 6.6188 |
| Total | 5.4000e-003 | 0.0669 | 0.0311 | 7.0000e-005 | 8.5800e-003 | 2.7500e-003 | 0.0113 | 2.1800e-003 | 2.5300e-003 | 4.7100e-003 | 0.0000 | 6.5669 | 6.5669 | 2.0800e-003 | 0.0000 | 6.6188 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.3 Site Preparation - 2019**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 1.3200e-003 | 0.0460 | 0.0100 | 1.2000e-004 | 2.5700e-003 | 1.7000e-004 | 2.7400e-003 | 7.0000e-004 | 1.6000e-004 | 8.7000e-004 | 0.0000 | 11.6939 | 11.6939 | 1.0600e-003 | 0.0000 | 11.7204 |
| 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 | 1.5000e-004 | 1.1000e-004 | 1.1000e-003 | 0.0000 | 3.0000e-004 | 0.0000 | 3.0000e-004 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.2807 | 0.2807 | 1.0000e-005 | 0.0000 | 0.2809 |
| Total | 1.4700e-003 | 0.0461 | 0.0111 | 1.2000e-004 | 2.8700e-003 | 1.7000e-004 | 3.0400e-003 | 7.8000e-004 | 1.6000e-004 | 9.5000e-004 | 0.0000 | 11.9746 | 11.9746 | 1.0700e-003 | 0.0000 | 12.0013 |

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 | | | | | 8.5800e-003 | 0.0000 | 8.5800e-003 | 2.1800e-003 | 0.0000 | 2.1800e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.4000e-003 | 0.0669 | 0.0311 | 7.0000e-005 | | 2.7500e-003 | 2.7500e-003 | | 2.5300e-003 | 2.5300e-003 | 0.0000 | 6.5669 | 6.5669 | 2.0800e-003 | 0.0000 | 6.6188 |
| Total | 5.4000e-003 | 0.0669 | 0.0311 | 7.0000e-005 | 8.5800e-003 | 2.7500e-003 | 0.0113 | 2.1800e-003 | 2.5300e-003 | 4.7100e-003 | 0.0000 | 6.5669 | 6.5669 | 2.0800e-003 | 0.0000 | 6.6188 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.3 Site Preparation - 2019**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 1.3200e-003 | 0.0460 | 0.0100 | 1.2000e-004 | 2.5700e-003 | 1.7000e-004 | 2.7400e-003 | 7.0000e-004 | 1.6000e-004 | 8.7000e-004 | 0.0000 | 11.6939 | 11.6939 | 1.0600e-003 | 0.0000 | 11.7204 |
| 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 | 1.5000e-004 | 1.1000e-004 | 1.1000e-003 | 0.0000 | 3.0000e-004 | 0.0000 | 3.0000e-004 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.2807 | 0.2807 | 1.0000e-005 | 0.0000 | 0.2809 |
| Total | 1.4700e-003 | 0.0461 | 0.0111 | 1.2000e-004 | 2.8700e-003 | 1.7000e-004 | 3.0400e-003 | 7.8000e-004 | 1.6000e-004 | 9.5000e-004 | 0.0000 | 11.9746 | 11.9746 | 1.0700e-003 | 0.0000 | 12.0013 |

3.4 Grading - 2019**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 | | | | | 2.7800e-003 | 0.0000 | 2.7800e-003 | 1.7600e-003 | 0.0000 | 1.7600e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 7.1500e-003 | 0.0645 | 0.0577 | 9.0000e-005 | | 4.0300e-003 | 4.0300e-003 | | 3.8400e-003 | 3.8400e-003 | 0.0000 | 7.8902 | 7.8902 | 1.5000e-003 | 0.0000 | 7.9278 |
| Total | 7.1500e-003 | 0.0645 | 0.0577 | 9.0000e-005 | 2.7800e-003 | 4.0300e-003 | 6.8100e-003 | 1.7600e-003 | 3.8400e-003 | 5.6000e-003 | 0.0000 | 7.8902 | 7.8902 | 1.5000e-003 | 0.0000 | 7.9278 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.4 Grading - 2019**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 | 3.0000e-004 | 2.3000e-004 | 2.1900e-003 | 1.0000e-005 | 6.0000e-004 | 0.0000 | 6.1000e-004 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 0.5614 | 0.5614 | 2.0000e-005 | 0.0000 | 0.5618 |
| Total | 3.0000e-004 | 2.3000e-004 | 2.1900e-003 | 1.0000e-005 | 6.0000e-004 | 0.0000 | 6.1000e-004 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 0.5614 | 0.5614 | 2.0000e-005 | 0.0000 | 0.5618 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 2.7800e-003 | 0.0000 | 2.7800e-003 | 1.7600e-003 | 0.0000 | 1.7600e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 7.1500e-003 | 0.0645 | 0.0577 | 9.0000e-005 | | 4.0300e-003 | 4.0300e-003 | | 3.8400e-003 | 3.8400e-003 | 0.0000 | 7.8902 | 7.8902 | 1.5000e-003 | 0.0000 | 7.9278 |
| Total | 7.1500e-003 | 0.0645 | 0.0577 | 9.0000e-005 | 2.7800e-003 | 4.0300e-003 | 6.8100e-003 | 1.7600e-003 | 3.8400e-003 | 5.6000e-003 | 0.0000 | 7.8902 | 7.8902 | 1.5000e-003 | 0.0000 | 7.9278 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.4 Grading - 2019**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 | 3.0000e-004 | 2.3000e-004 | 2.1900e-003 | 1.0000e-005 | 6.0000e-004 | 0.0000 | 6.1000e-004 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 0.5614 | 0.5614 | 2.0000e-005 | 0.0000 | 0.5618 |
| Total | 3.0000e-004 | 2.3000e-004 | 2.1900e-003 | 1.0000e-005 | 6.0000e-004 | 0.0000 | 6.1000e-004 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 0.5614 | 0.5614 | 2.0000e-005 | 0.0000 | 0.5618 |

3.5 Building Construction - 2019**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 | 0.0125 | 0.1277 | 0.0981 | 1.5000e-004 | | 7.8700e-003 | 7.8700e-003 | | 7.2400e-003 | 7.2400e-003 | 0.0000 | 13.2991 | 13.2991 | 4.2100e-003 | 0.0000 | 13.4043 |
| Total | 0.0125 | 0.1277 | 0.0981 | 1.5000e-004 | | 7.8700e-003 | 7.8700e-003 | | 7.2400e-003 | 7.2400e-003 | 0.0000 | 13.2991 | 13.2991 | 4.2100e-003 | 0.0000 | 13.4043 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.5 Building Construction - 2019**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 | 2.4000e-004 | 6.5300e-003 | 1.7500e-003 | 1.0000e-005 | 3.5000e-004 | 5.0000e-005 | 3.9000e-004 | 1.0000e-004 | 4.0000e-005 | 1.4000e-004 | 0.0000 | 1.3815 | 1.3815 | 1.1000e-004 | 0.0000 | 1.3843 |
| Worker | 4.6000e-004 | 3.5000e-004 | 3.4200e-003 | 1.0000e-005 | 9.4000e-004 | 1.0000e-005 | 9.5000e-004 | 2.5000e-004 | 1.0000e-005 | 2.6000e-004 | 0.0000 | 0.8757 | 0.8757 | 3.0000e-005 | 0.0000 | 0.8764 |
| Total | 7.0000e-004 | 6.8800e-003 | 5.1700e-003 | 2.0000e-005 | 1.2900e-003 | 6.0000e-005 | 1.3400e-003 | 3.5000e-004 | 5.0000e-005 | 4.0000e-004 | 0.0000 | 2.2573 | 2.2573 | 1.4000e-004 | 0.0000 | 2.2607 |

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 | 0.0125 | 0.1277 | 0.0981 | 1.5000e-004 | | 7.8700e-003 | 7.8700e-003 | | 7.2400e-003 | 7.2400e-003 | 0.0000 | 13.2990 | 13.2990 | 4.2100e-003 | 0.0000 | 13.4042 |
| Total | 0.0125 | 0.1277 | 0.0981 | 1.5000e-004 | | 7.8700e-003 | 7.8700e-003 | | 7.2400e-003 | 7.2400e-003 | 0.0000 | 13.2990 | 13.2990 | 4.2100e-003 | 0.0000 | 13.4042 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.5 Building Construction - 2019**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 | 2.4000e-004 | 6.5300e-003 | 1.7500e-003 | 1.0000e-005 | 3.5000e-004 | 5.0000e-005 | 3.9000e-004 | 1.0000e-004 | 4.0000e-005 | 1.4000e-004 | 0.0000 | 1.3815 | 1.3815 | 1.1000e-004 | 0.0000 | 1.3843 |
| Worker | 4.6000e-004 | 3.5000e-004 | 3.4200e-003 | 1.0000e-005 | 9.4000e-004 | 1.0000e-005 | 9.5000e-004 | 2.5000e-004 | 1.0000e-005 | 2.6000e-004 | 0.0000 | 0.8757 | 0.8757 | 3.0000e-005 | 0.0000 | 0.8764 |
| Total | 7.0000e-004 | 6.8800e-003 | 5.1700e-003 | 2.0000e-005 | 1.2900e-003 | 6.0000e-005 | 1.3400e-003 | 3.5000e-004 | 5.0000e-005 | 4.0000e-004 | 0.0000 | 2.2573 | 2.2573 | 1.4000e-004 | 0.0000 | 2.2607 |

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 | 0.0534 | 0.5488 | 0.4580 | 7.1000e-004 | | 0.0324 | 0.0324 | | 0.0298 | 0.0298 | 0.0000 | 62.0375 | 62.0375 | 0.0201 | 0.0000 | 62.5391 |
| Total | 0.0534 | 0.5488 | 0.4580 | 7.1000e-004 | | 0.0324 | 0.0324 | | 0.0298 | 0.0298 | 0.0000 | 62.0375 | 62.0375 | 0.0201 | 0.0000 | 62.5391 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

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 | 9.4000e-004 | 0.0283 | 7.5100e-003 | 7.0000e-005 | 1.6500e-003 | 1.4000e-004 | 1.7800e-003 | 4.8000e-004 | 1.3000e-004 | 6.1000e-004 | 0.0000 | 6.5438 | 6.5438 | 5.0000e-004 | 0.0000 | 6.5563 |
| Worker | 2.0600e-003 | 1.5200e-003 | 0.0149 | 4.0000e-005 | 4.4700e-003 | 3.0000e-005 | 4.5100e-003 | 1.1900e-003 | 3.0000e-005 | 1.2200e-003 | 0.0000 | 4.0448 | 4.0448 | 1.2000e-004 | 0.0000 | 4.0478 |
| Total | 3.0000e-003 | 0.0298 | 0.0224 | 1.1000e-004 | 6.1200e-003 | 1.7000e-004 | 6.2900e-003 | 1.6700e-003 | 1.6000e-004 | 1.8300e-003 | 0.0000 | 10.5886 | 10.5886 | 6.2000e-004 | 0.0000 | 10.6041 |

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 | 0.0534 | 0.5488 | 0.4580 | 7.1000e-004 | | 0.0324 | 0.0324 | | 0.0298 | 0.0298 | 0.0000 | 62.0374 | 62.0374 | 0.0201 | 0.0000 | 62.5390 |
| Total | 0.0534 | 0.5488 | 0.4580 | 7.1000e-004 | | 0.0324 | 0.0324 | | 0.0298 | 0.0298 | 0.0000 | 62.0374 | 62.0374 | 0.0201 | 0.0000 | 62.5390 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

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 | 9.4000e-004 | 0.0283 | 7.5100e-003 | 7.0000e-005 | 1.6500e-003 | 1.4000e-004 | 1.7800e-003 | 4.8000e-004 | 1.3000e-004 | 6.1000e-004 | 0.0000 | 6.5438 | 6.5438 | 5.0000e-004 | 0.0000 | 6.5563 |
| Worker | 2.0600e-003 | 1.5200e-003 | 0.0149 | 4.0000e-005 | 4.4700e-003 | 3.0000e-005 | 4.5100e-003 | 1.1900e-003 | 3.0000e-005 | 1.2200e-003 | 0.0000 | 4.0448 | 4.0448 | 1.2000e-004 | 0.0000 | 4.0478 |
| Total | 3.0000e-003 | 0.0298 | 0.0224 | 1.1000e-004 | 6.1200e-003 | 1.7000e-004 | 6.2900e-003 | 1.6700e-003 | 1.6000e-004 | 1.8300e-003 | 0.0000 | 10.5886 | 10.5886 | 6.2000e-004 | 0.0000 | 10.6041 |

3.6 Paving - 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 | 3.8600e-003 | 0.0361 | 0.0356 | 6.0000e-005 | | 1.9800e-003 | 1.9800e-003 | | 1.8300e-003 | 1.8300e-003 | 0.0000 | 4.6965 | 4.6965 | 1.3700e-003 | 0.0000 | 4.7307 |
| Paving | 2.4000e-004 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 4.1000e-003 | 0.0361 | 0.0356 | 6.0000e-005 | | 1.9800e-003 | 1.9800e-003 | | 1.8300e-003 | 1.8300e-003 | 0.0000 | 4.6965 | 4.6965 | 1.3700e-003 | 0.0000 | 4.7307 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.6 Paving - 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 | 3.3000e-004 | 2.5000e-004 | 2.4100e-003 | 1.0000e-005 | 7.2000e-004 | 1.0000e-005 | 7.3000e-004 | 1.9000e-004 | 0.0000 | 2.0000e-004 | 0.0000 | 0.6524 | 0.6524 | 2.0000e-005 | 0.0000 | 0.6529 |
| Total | 3.3000e-004 | 2.5000e-004 | 2.4100e-003 | 1.0000e-005 | 7.2000e-004 | 1.0000e-005 | 7.3000e-004 | 1.9000e-004 | 0.0000 | 2.0000e-004 | 0.0000 | 0.6524 | 0.6524 | 2.0000e-005 | 0.0000 | 0.6529 |

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 | 3.8600e-003 | 0.0361 | 0.0356 | 6.0000e-005 | | 1.9800e-003 | 1.9800e-003 | | 1.8300e-003 | 1.8300e-003 | 0.0000 | 4.6965 | 4.6965 | 1.3700e-003 | 0.0000 | 4.7307 |
| Paving | 2.4000e-004 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 4.1000e-003 | 0.0361 | 0.0356 | 6.0000e-005 | | 1.9800e-003 | 1.9800e-003 | | 1.8300e-003 | 1.8300e-003 | 0.0000 | 4.6965 | 4.6965 | 1.3700e-003 | 0.0000 | 4.7307 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.6 Paving - 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 | 3.3000e-004 | 2.5000e-004 | 2.4100e-003 | 1.0000e-005 | 7.2000e-004 | 1.0000e-005 | 7.3000e-004 | 1.9000e-004 | 0.0000 | 2.0000e-004 | 0.0000 | 0.6524 | 0.6524 | 2.0000e-005 | 0.0000 | 0.6529 |
| Total | 3.3000e-004 | 2.5000e-004 | 2.4100e-003 | 1.0000e-005 | 7.2000e-004 | 1.0000e-005 | 7.3000e-004 | 1.9000e-004 | 0.0000 | 2.0000e-004 | 0.0000 | 0.6524 | 0.6524 | 2.0000e-005 | 0.0000 | 0.6529 |

3.7 Architectural Coating - 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 | | | | | |
| Archit. Coating | 0.1584 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.2100e-003 | 8.4200e-003 | 9.1600e-003 | 1.0000e-005 | | 5.5000e-004 | 5.5000e-004 | | 5.5000e-004 | 5.5000e-004 | 0.0000 | 1.2766 | 1.2766 | 1.0000e-004 | 0.0000 | 1.2791 |
| Total | 0.1596 | 8.4200e-003 | 9.1600e-003 | 1.0000e-005 | | 5.5000e-004 | 5.5000e-004 | | 5.5000e-004 | 5.5000e-004 | 0.0000 | 1.2766 | 1.2766 | 1.0000e-004 | 0.0000 | 1.2791 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.7 Architectural Coating - 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 | 4.0000e-005 | 3.0000e-005 | 2.7000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0725 | 0.0725 | 0.0000 | 0.0000 | 0.0725 |
| Total | 4.0000e-005 | 3.0000e-005 | 2.7000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0725 | 0.0725 | 0.0000 | 0.0000 | 0.0725 |

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 | 0.1584 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.2100e-003 | 8.4200e-003 | 9.1600e-003 | 1.0000e-005 | | 5.5000e-004 | 5.5000e-004 | | 5.5000e-004 | 5.5000e-004 | 0.0000 | 1.2766 | 1.2766 | 1.0000e-004 | 0.0000 | 1.2791 |
| Total | 0.1596 | 8.4200e-003 | 9.1600e-003 | 1.0000e-005 | | 5.5000e-004 | 5.5000e-004 | | 5.5000e-004 | 5.5000e-004 | 0.0000 | 1.2766 | 1.2766 | 1.0000e-004 | 0.0000 | 1.2791 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

3.7 Architectural Coating - 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 | 4.0000e-005 | 3.0000e-005 | 2.7000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0725 | 0.0725 | 0.0000 | 0.0000 | 0.0725 |
| Total | 4.0000e-005 | 3.0000e-005 | 2.7000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0725 | 0.0725 | 0.0000 | 0.0000 | 0.0725 |

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

| | ROG | NOx | CO | SO2 | 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 | 2.2400e-003 | 0.0101 | 0.0271 | 9.0000e-005 | 7.3900e-003 | 9.0000e-005 | 7.4800e-003 | 1.9800e-003 | 8.0000e-005 | 2.0600e-003 | 0.0000 | 8.1642 | 8.1642 | 4.4000e-004 | 0.0000 | 8.1753 |
| Unmitigated | 2.2400e-003 | 0.0101 | 0.0271 | 9.0000e-005 | 7.3900e-003 | 9.0000e-005 | 7.4800e-003 | 1.9800e-003 | 8.0000e-005 | 2.0600e-003 | 0.0000 | 8.1642 | 8.1642 | 4.4000e-004 | 0.0000 | 8.1753 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 4.50 | 4.50 | 4.50 | 13,138 | 13,138 |
| General Light Industry | 2.22 | 2.22 | 2.22 | 6,467 | 6,467 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Total | 6.72 | 6.72 | 6.72 | 19,605 | 19,605 |

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 | 9.50 | 7.30 | 7.30 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| General Light Industry | 9.50 | 7.30 | 7.30 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| Other Asphalt Surfaces | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

4.4 Fleet Mix

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| General Light Industry | 0.588316 | 0.042913 | 0.184449 | 0.110793 | 0.017294 | 0.005558 | 0.015534 | 0.023021 | 0.001902 | 0.002024 | 0.006181 | 0.000745 | 0.001271 |
| Other Asphalt Surfaces | 0.588316 | 0.042913 | 0.184449 | 0.110793 | 0.017294 | 0.005558 | 0.015534 | 0.023021 | 0.001902 | 0.002024 | 0.006181 | 0.000745 | 0.001271 |

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|-------------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|-------------|---------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 44.5488 | 44.5488 | 1.7900e-003 | 3.7000e-004 | 44.7042 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 44.5488 | 44.5488 | 1.7900e-003 | 3.7000e-004 | 44.7042 |
| NaturalGas Mitigated | 2.3500e-003 | 0.0214 | 0.0180 | 1.3000e-004 | | 1.6300e-003 | 1.6300e-003 | | 1.6300e-003 | 1.6300e-003 | 0.0000 | 23.2848 | 23.2848 | 4.5000e-004 | 4.3000e-004 | 23.4232 |
| NaturalGas Unmitigated | 2.3500e-003 | 0.0214 | 0.0180 | 1.3000e-004 | | 1.6300e-003 | 1.6300e-003 | | 1.6300e-003 | 1.6300e-003 | 0.0000 | 23.2848 | 23.2848 | 4.5000e-004 | 4.3000e-004 | 23.4232 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

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 | 143931 | 7.8000e-004 | 7.0600e-003 | 5.9300e-003 | 4.0000e-005 | | 5.4000e-004 | 5.4000e-004 | | 5.4000e-004 | 5.4000e-004 | 0.0000 | 7.6807 | 7.6807 | 1.5000e-004 | 1.4000e-004 | 7.7263 |
| General Light Industry | 292410 | 1.5800e-003 | 0.0143 | 0.0120 | 9.0000e-005 | | 1.0900e-003 | 1.0900e-003 | | 1.0900e-003 | 1.0900e-003 | 0.0000 | 15.6041 | 15.6041 | 3.0000e-004 | 2.9000e-004 | 15.6968 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 2.3600e-003 | 0.0214 | 0.0180 | 1.3000e-004 | | 1.6300e-003 | 1.6300e-003 | | 1.6300e-003 | 1.6300e-003 | 0.0000 | 23.2848 | 23.2848 | 4.5000e-004 | 4.3000e-004 | 23.4232 |

Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|------------------------|----------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| General Light Industry | 143931 | 7.8000e-004 | 7.0600e-003 | 5.9300e-003 | 4.0000e-005 | | 5.4000e-004 | 5.4000e-004 | | 5.4000e-004 | 5.4000e-004 | 0.0000 | 7.6807 | 7.6807 | 1.5000e-004 | 1.4000e-004 | 7.7263 |
| General Light Industry | 292410 | 1.5800e-003 | 0.0143 | 0.0120 | 9.0000e-005 | | 1.0900e-003 | 1.0900e-003 | | 1.0900e-003 | 1.0900e-003 | 0.0000 | 15.6041 | 15.6041 | 3.0000e-004 | 2.9000e-004 | 15.6968 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 2.3600e-003 | 0.0214 | 0.0180 | 1.3000e-004 | | 1.6300e-003 | 1.6300e-003 | | 1.6300e-003 | 1.6300e-003 | 0.0000 | 23.2848 | 23.2848 | 4.5000e-004 | 4.3000e-004 | 23.4232 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

5.3 Energy by Land Use - Electricity**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|-----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 44964.5 | 14.6948 | 5.9000e-004 | 1.2000e-004 | 14.7461 |
| General Light Industry | 91350 | 29.8540 | 1.2000e-003 | 2.5000e-004 | 29.9581 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 44.5488 | 1.7900e-003 | 3.7000e-004 | 44.7042 |

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|-----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 44964.5 | 14.6948 | 5.9000e-004 | 1.2000e-004 | 14.7461 |
| General Light Industry | 91350 | 29.8540 | 1.2000e-003 | 2.5000e-004 | 29.9581 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 44.5488 | 1.7900e-003 | 3.7000e-004 | 44.7042 |

6.0 Area Detail

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

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 | 0.0688 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |
| Unmitigated | 0.0688 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |

6.2 Area by SubCategory**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0158 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0530 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.0000e-005 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |
| Total | 0.0688 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

6.2 Area by SubCategory**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0158 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0530 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.0000e-005 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |
| Total | 0.0688 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |

7.0 Water Detail**7.1 Mitigation Measures Water**

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|-------------|---------|
| Category | MT/yr | | | |
| Mitigated | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |
| Unmitigated | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|--------------------|----------------|---------------|--------------------|----------------|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 3.10569 / 0 | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

7.2 Water by Land Use**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|--------------------|----------------|---------------|--------------------|----------------|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 3.10569 / 0 | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|--------|
| | MT/yr | | | |
| Mitigated | 3.3798 | 0.1997 | 0.0000 | 8.3733 |
| Unmitigated | 3.3798 | 0.1997 | 0.0000 | 8.3733 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

8.2 Waste by Land Use**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 16.65 | 3.3798 | 0.1997 | 0.0000 | 8.3733 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 3.3798 | 0.1997 | 0.0000 | 8.3733 |

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 16.65 | 3.3798 | 0.1997 | 0.0000 | 8.3733 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 3.3798 | 0.1997 | 0.0000 | 8.3733 |

9.0 Operational Offroad

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

Sweetwater CWT CalEEMod - San Diego 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 |
|----------------|--------|-----------|------------|-------------|-------------|-----------|
|----------------|--------|-----------|------------|-------------|-------------|-----------|

Boilers

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

User Defined Equipment

| Equipment Type | Number |
|----------------|--------|
|----------------|--------|

11.0 Vegetation

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

Sweetwater CWT CalEEMod

San Diego Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|------------------------|------|----------|-------------|--------------------|------------|
| General Light Industry | 9.00 | 1000sqft | 0.21 | 9,000.00 | 0 |
| Other Asphalt Surfaces | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| General Light Industry | 4.43 | 1000sqft | 0.10 | 4,430.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|---------------------------------|--------------------------|---------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.6 | Precipitation Freq (Days) | 40 |
| Climate Zone | 10 | | | Operational Year | 2020 |
| Utility Company | San Diego Gas & Electric | | | | |
| CO2 Intensity (lb/MW hr) | 720.49 | CH4 Intensity (lb/MW hr) | 0.029 | N2O Intensity (lb/MW hr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tank retaining wall slab will be 9000 sq ft; assumed general light industry

Road extension of 400 ft L x 20 ft W; assumed other asphalt surfaces

Piping extension, total of 2215 ft L x 2 ft W (assumed); assumed general light industry

Construction Phase - Construction would take place for approximately nine months, from October 2019 through July 2020

Grading - 2400 cubic yards of material imported.

Vehicle Trips - There will be 10 trips per year for O&M; proposed trip #s are very conservative.

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

| Table Name | Column Name | Default Value | New Value |
|----------------------|---------------------|---------------|------------|
| tblConstructionPhase | NumDays | 5.00 | 10.00 |
| tblConstructionPhase | NumDays | 100.00 | 150.00 |
| tblConstructionPhase | NumDays | 2.00 | 15.00 |
| tblConstructionPhase | NumDays | 5.00 | 10.00 |
| tblConstructionPhase | NumDays | 1.00 | 15.00 |
| tblConstructionPhase | PhaseEndDate | 3/19/2020 | 7/20/2020 |
| tblConstructionPhase | PhaseEndDate | 3/5/2020 | 6/22/2020 |
| tblConstructionPhase | PhaseEndDate | 10/17/2019 | 11/25/2019 |
| tblConstructionPhase | PhaseEndDate | 3/12/2020 | 7/6/2020 |
| tblConstructionPhase | PhaseEndDate | 10/15/2019 | 11/4/2019 |
| tblConstructionPhase | PhaseStartDate | 3/13/2020 | 7/7/2020 |
| tblConstructionPhase | PhaseStartDate | 10/18/2019 | 11/26/2019 |
| tblConstructionPhase | PhaseStartDate | 10/16/2019 | 11/5/2019 |
| tblConstructionPhase | PhaseStartDate | 3/6/2020 | 6/23/2020 |
| tblGrading | AcresOfGrading | 7.50 | 0.50 |
| tblGrading | MaterialImported | 0.00 | 2,400.00 |
| tblGrading | MaterialSiltContent | 6.90 | 4.30 |
| tblGrading | MaterialSiltContent | 6.90 | 4.30 |
| tblGrading | MeanVehicleSpeed | 7.10 | 40.00 |
| tblGrading | MeanVehicleSpeed | 7.10 | 40.00 |
| tblVehicleTrips | ST_TR | 1.32 | 0.50 |
| tblVehicleTrips | SU_TR | 0.68 | 0.50 |
| tblVehicleTrips | WD_TR | 6.97 | 0.50 |

2.0 Emissions Summary

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|---------|---------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------------|----------------|--------|--------|----------------|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2019 | 1.0113 | 14.9381 | 8.0011 | 0.0261 | 1.5350 | 0.6094 | 1.9252 | 0.3976 | 0.5607 | 0.7694 | 0.0000 | 2,739.624 4 | 2,739.624 4 | 0.4599 | 0.0000 | 2,751.122 9 |
| 2020 | 31.9298 | 9.3256 | 7.7575 | 0.0133 | 0.1479 | 0.5251 | 0.6261 | 0.0392 | 0.4832 | 0.5106 | 0.0000 | 1,296.441 4 | 1,296.441 4 | 0.3677 | 0.0000 | 1,305.633 0 |
| Maximum | 31.9298 | 14.9381 | 8.0011 | 0.0261 | 1.5350 | 0.6094 | 1.9252 | 0.3976 | 0.5607 | 0.7694 | 0.0000 | 2,739.624 4 | 2,739.624 4 | 0.4599 | 0.0000 | 2,751.122 9 |

Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|---------|---------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------------|----------------|--------|--------|----------------|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2019 | 1.0113 | 14.9381 | 8.0011 | 0.0261 | 1.5350 | 0.6094 | 1.9252 | 0.3976 | 0.5607 | 0.7694 | 0.0000 | 2,739.624 4 | 2,739.624 4 | 0.4599 | 0.0000 | 2,751.122 9 |
| 2020 | 31.9298 | 9.3256 | 7.7575 | 0.0133 | 0.1479 | 0.5251 | 0.6261 | 0.0392 | 0.4832 | 0.5106 | 0.0000 | 1,296.441 4 | 1,296.441 4 | 0.3677 | 0.0000 | 1,305.633 0 |
| Maximum | 31.9298 | 14.9381 | 8.0011 | 0.0261 | 1.5350 | 0.6094 | 1.9252 | 0.3976 | 0.5607 | 0.7694 | 0.0000 | 2,739.624 4 | 2,739.624 4 | 0.4599 | 0.0000 | 2,751.122 9 |

[illegible]

Sweetwater CWT CalEEMod - San Diego 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 | 0.3772 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |
| Energy | 0.0129 | 0.1172 | 0.0985 | 7.0000e-004 | | 8.9100e-003 | 8.9100e-003 | | 8.9100e-003 | 8.9100e-003 | | 140.6416 | 140.6416 | 2.7000e-003 | 2.5800e-003 | 141.4774 |
| Mobile | 0.0129 | 0.0536 | 0.1533 | 5.1000e-004 | 0.0416 | 4.9000e-004 | 0.0421 | 0.0111 | 4.6000e-004 | 0.0116 | | 51.6698 | 51.6698 | 2.7000e-003 | | 51.7373 |
| Total | 0.4031 | 0.1708 | 0.2539 | 1.2100e-003 | 0.0416 | 9.4100e-003 | 0.0510 | 0.0111 | 9.3800e-003 | 0.0205 | | 192.3161 | 192.3161 | 5.4100e-003 | 2.5800e-003 | 193.2198 |

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 | 0.3772 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |
| Energy | 0.0129 | 0.1172 | 0.0985 | 7.0000e-004 | | 8.9100e-003 | 8.9100e-003 | | 8.9100e-003 | 8.9100e-003 | | 140.6416 | 140.6416 | 2.7000e-003 | 2.5800e-003 | 141.4774 |
| Mobile | 0.0129 | 0.0536 | 0.1533 | 5.1000e-004 | 0.0416 | 4.9000e-004 | 0.0421 | 0.0111 | 4.6000e-004 | 0.0116 | | 51.6698 | 51.6698 | 2.7000e-003 | | 51.7373 |
| Total | 0.4031 | 0.1708 | 0.2539 | 1.2100e-003 | 0.0416 | 9.4100e-003 | 0.0510 | 0.0111 | 9.3800e-003 | 0.0205 | | 192.3161 | 192.3161 | 5.4100e-003 | 2.5800e-003 | 193.2198 |

Sweetwater CWT CalEEMod - San Diego 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 |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

3.0 Construction Detail**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|--------------|-----------------------|-----------------------|------------|------------|---------------|----------|-------------------|
| 1 | Demolition | Demolition | 10/1/2019 | 10/14/2019 | 5 | 10 | |
| 2 | Site Preparation | Site Preparation | 10/15/2019 | 11/4/2019 | 5 | 15 | |
| 3 | Grading | Grading | 11/5/2019 | 11/25/2019 | 5 | 15 | |
| 4 | Building Construction | Building Construction | 11/26/2019 | 6/22/2020 | 5 | 150 | |
| 5 | Paving | Paving | 6/23/2020 | 7/6/2020 | 5 | 10 | |
| 6 | Architectural Coating | Architectural Coating | 7/7/2020 | 7/20/2020 | 5 | 10 | |

Acres of Grading (Site Preparation Phase): 0.5**Acres of Grading (Grading Phase): 0****Acres of Paving: 0.18****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 20,145; Non-Residential Outdoor: 6,715; Striped Parking Area: 480 (Architectural Coating – sqft)****OffRoad Equipment**

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Cement and Mortar Mixers | 4 | 6.00 | 9 | 0.56 |
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Grading | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Building Construction | Cranes | 1 | 4.00 | 231 | 0.29 |
| Building Construction | Forklifts | 2 | 6.00 | 89 | 0.20 |
| Site Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Paving | Pavers | 1 | 7.00 | 130 | 0.42 |
| Paving | Rollers | 1 | 7.00 | 80 | 0.38 |
| Demolition | Rubber Tired Dozers | 1 | 1.00 | 247 | 0.40 |
| Grading | Rubber Tired Dozers | 1 | 1.00 | 247 | 0.40 |
| Building Construction | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Demolition | Tractors/Loaders/Backhoes | 2 | 6.00 | 97 | 0.37 |
| Grading | Tractors/Loaders/Backhoes | 2 | 6.00 | 97 | 0.37 |
| Paving | Tractors/Loaders/Backhoes | 1 | 7.00 | 97 | 0.37 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |

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 | 4 | 10.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 2 | 5.00 | 0.00 | 300.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 4 | 10.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 5 | 9.00 | 4.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 2.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.1 Mitigation Measures Construction**3.2 Demolition - 2019****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 | 0.9530 | 8.6039 | 7.6917 | 0.0120 | | 0.5371 | 0.5371 | | 0.5125 | 0.5125 | | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |
| Total | 0.9530 | 8.6039 | 7.6917 | 0.0120 | | 0.5371 | 0.5371 | | 0.5125 | 0.5125 | | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.2 Demolition - 2019**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|----------------|----------------|--------------------|-----|----------------|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0393 | 0.0274 | 0.3094 | 8.7000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 87.0200 | 87.0200 | 2.7800e-003 | | 87.0894 |
| Total | 0.0393 | 0.0274 | 0.3094 | 8.7000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 87.0200 | 87.0200 | 2.7800e-003 | | 87.0894 |

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 | 0.9530 | 8.6039 | 7.6917 | 0.0120 | | 0.5371 | 0.5371 | | 0.5125 | 0.5125 | 0.0000 | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |
| Total | 0.9530 | 8.6039 | 7.6917 | 0.0120 | | 0.5371 | 0.5371 | | 0.5125 | 0.5125 | 0.0000 | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.2 Demolition - 2019**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|----------------|----------------|--------------------|-----|----------------|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0393 | 0.0274 | 0.3094 | 8.7000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 87.0200 | 87.0200 | 2.7800e-003 | | 87.0894 |
| Total | 0.0393 | 0.0274 | 0.3094 | 8.7000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 87.0200 | 87.0200 | 2.7800e-003 | | 87.0894 |

3.3 Site Preparation - 2019**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 | | | | | 1.1445 | 0.0000 | 1.1445 | 0.2910 | 0.0000 | 0.2910 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.7195 | 8.9170 | 4.1407 | 9.7500e-003 | | 0.3672 | 0.3672 | | 0.3378 | 0.3378 | | 965.1690 | 965.1690 | 0.3054 | | 972.8032 |
| Total | 0.7195 | 8.9170 | 4.1407 | 9.7500e-003 | 1.1445 | 0.3672 | 1.5117 | 0.2910 | 0.3378 | 0.6288 | | 965.1690 | 965.1690 | 0.3054 | | 972.8032 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.3 Site Preparation - 2019**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 | 0.1736 | 6.0075 | 1.2968 | 0.0159 | 0.3495 | 0.0227 | 0.3722 | 0.0958 | 0.0217 | 0.1175 | | 1,730.945 4 | 1,730.945 4 | 0.1532 | | 1,734.775 0 |
| 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 | 0.0196 | 0.0137 | 0.1547 | 4.4000e-004 | 0.0411 | 2.9000e-004 | 0.0414 | 0.0109 | 2.7000e-004 | 0.0112 | | 43.5100 | 43.5100 | 1.3900e-003 | | 43.5447 |
| Total | 0.1932 | 6.0212 | 1.4515 | 0.0163 | 0.3906 | 0.0230 | 0.4135 | 0.1067 | 0.0220 | 0.1286 | | 1,774.455 4 | 1,774.455 4 | 0.1546 | | 1,778.319 7 |

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 | | | | | 1.1445 | 0.0000 | 1.1445 | 0.2910 | 0.0000 | 0.2910 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.7195 | 8.9170 | 4.1407 | 9.7500e-003 | | 0.3672 | 0.3672 | | 0.3378 | 0.3378 | 0.0000 | 965.1690 | 965.1690 | 0.3054 | | 972.8032 |
| Total | 0.7195 | 8.9170 | 4.1407 | 9.7500e-003 | 1.1445 | 0.3672 | 1.5117 | 0.2910 | 0.3378 | 0.6288 | 0.0000 | 965.1690 | 965.1690 | 0.3054 | | 972.8032 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.3 Site Preparation - 2019**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 | 0.1736 | 6.0075 | 1.2968 | 0.0159 | 0.3495 | 0.0227 | 0.3722 | 0.0958 | 0.0217 | 0.1175 | | 1,730.9454 | 1,730.9454 | 0.1532 | | 1,734.7750 |
| 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 | 0.0196 | 0.0137 | 0.1547 | 4.4000e-004 | 0.0411 | 2.9000e-004 | 0.0414 | 0.0109 | 2.7000e-004 | 0.0112 | | 43.5100 | 43.5100 | 1.3900e-003 | | 43.5447 |
| Total | 0.1932 | 6.0212 | 1.4515 | 0.0163 | 0.3906 | 0.0230 | 0.4135 | 0.1067 | 0.0220 | 0.1286 | | 1,774.4554 | 1,774.4554 | 0.1546 | | 1,778.3197 |

3.4 Grading - 2019**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 | | | | | 0.3703 | 0.0000 | 0.3703 | 0.2346 | 0.0000 | 0.2346 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.9530 | 8.6039 | 7.6917 | 0.0120 | | 0.5371 | 0.5371 | | 0.5125 | 0.5125 | | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |
| Total | 0.9530 | 8.6039 | 7.6917 | 0.0120 | 0.3703 | 0.5371 | 0.9074 | 0.2346 | 0.5125 | 0.7471 | | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.4 Grading - 2019**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|----------------|----------------|--------------------|-----|----------------|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0393 | 0.0274 | 0.3094 | 8.7000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 87.0200 | 87.0200 | 2.7800e-003 | | 87.0894 |
| Total | 0.0393 | 0.0274 | 0.3094 | 8.7000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 87.0200 | 87.0200 | 2.7800e-003 | | 87.0894 |

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 | | | | | 0.3703 | 0.0000 | 0.3703 | 0.2346 | 0.0000 | 0.2346 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.9530 | 8.6039 | 7.6917 | 0.0120 | | 0.5371 | 0.5371 | | 0.5125 | 0.5125 | 0.0000 | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |
| Total | 0.9530 | 8.6039 | 7.6917 | 0.0120 | 0.3703 | 0.5371 | 0.9074 | 0.2346 | 0.5125 | 0.7471 | 0.0000 | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.4 Grading - 2019**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|----------------|----------------|--------------------|-----|----------------|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0393 | 0.0274 | 0.3094 | 8.7000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 87.0200 | 87.0200 | 2.7800e-003 | | 87.0894 |
| Total | 0.0393 | 0.0274 | 0.3094 | 8.7000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 87.0200 | 87.0200 | 2.7800e-003 | | 87.0894 |

3.5 Building Construction - 2019**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 | 0.9576 | 9.8207 | 7.5432 | 0.0114 | | 0.6054 | 0.6054 | | 0.5569 | 0.5569 | | 1,127.6696 | 1,127.6696 | 0.3568 | | 1,136.5892 |
| Total | 0.9576 | 9.8207 | 7.5432 | 0.0114 | | 0.6054 | 0.6054 | | 0.5569 | 0.5569 | | 1,127.6696 | 1,127.6696 | 0.3568 | | 1,136.5892 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.5 Building Construction - 2019**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 | 0.0184 | 0.4960 | 0.1280 | 1.1000e-003 | 0.0271 | 3.4500e-003 | 0.0305 | 7.8000e-003 | 3.3000e-003 | 0.0111 | | 118.4067 | 118.4067 | 9.1400e-003 | | 118.6352 |
| Worker | 0.0353 | 0.0247 | 0.2785 | 7.9000e-004 | 0.0739 | 5.3000e-004 | 0.0745 | 0.0196 | 4.9000e-004 | 0.0201 | | 78.3180 | 78.3180 | 2.5000e-003 | | 78.3805 |
| Total | 0.0538 | 0.5206 | 0.4065 | 1.8900e-003 | 0.1010 | 3.9800e-003 | 0.1050 | 0.0274 | 3.7900e-003 | 0.0312 | | 196.7246 | 196.7246 | 0.0116 | | 197.0157 |

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 | 0.9576 | 9.8207 | 7.5432 | 0.0114 | | 0.6054 | 0.6054 | | 0.5569 | 0.5569 | 0.0000 | 1,127.6696 | 1,127.6696 | 0.3568 | | 1,136.5892 |
| Total | 0.9576 | 9.8207 | 7.5432 | 0.0114 | | 0.6054 | 0.6054 | | 0.5569 | 0.5569 | 0.0000 | 1,127.6696 | 1,127.6696 | 0.3568 | | 1,136.5892 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.5 Building Construction - 2019**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 | 0.0184 | 0.4960 | 0.1280 | 1.1000e-003 | 0.0271 | 3.4500e-003 | 0.0305 | 7.8000e-003 | 3.3000e-003 | 0.0111 | | 118.4067 | 118.4067 | 9.1400e-003 | | 118.6352 |
| Worker | 0.0353 | 0.0247 | 0.2785 | 7.9000e-004 | 0.0739 | 5.3000e-004 | 0.0745 | 0.0196 | 4.9000e-004 | 0.0201 | | 78.3180 | 78.3180 | 2.5000e-003 | | 78.3805 |
| Total | 0.0538 | 0.5206 | 0.4065 | 1.8900e-003 | 0.1010 | 3.9800e-003 | 0.1050 | 0.0274 | 3.7900e-003 | 0.0312 | | 196.7246 | 196.7246 | 0.0116 | | 197.0157 |

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 | 0.8617 | 8.8523 | 7.3875 | 0.0114 | | 0.5224 | 0.5224 | | 0.4806 | 0.4806 | | 1,102.9781 | 1,102.9781 | 0.3567 | | 1,111.8962 |
| Total | 0.8617 | 8.8523 | 7.3875 | 0.0114 | | 0.5224 | 0.5224 | | 0.4806 | 0.4806 | | 1,102.9781 | 1,102.9781 | 0.3567 | | 1,111.8962 |

Sweetwater CWT CalEEMod - San Diego 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 | 0.0150 | 0.4510 | 0.1149 | 1.1000e-003 | 0.0271 | 2.2100e-003 | 0.0293 | 7.8000e-003 | 2.1100e-003 | 9.9100e-003 | | 117.6160 | 117.6160 | 8.6800e-003 | | 117.8330 |
| Worker | 0.0330 | 0.0223 | 0.2551 | 7.6000e-004 | 0.0739 | 5.2000e-004 | 0.0745 | 0.0196 | 4.8000e-004 | 0.0201 | | 75.8472 | 75.8472 | 2.2600e-003 | | 75.9039 |
| Total | 0.0480 | 0.4733 | 0.3700 | 1.8600e-003 | 0.1010 | 2.7300e-003 | 0.1037 | 0.0274 | 2.5900e-003 | 0.0300 | | 193.4633 | 193.4633 | 0.0109 | | 193.7368 |

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 | 0.8617 | 8.8523 | 7.3875 | 0.0114 | | 0.5224 | 0.5224 | | 0.4806 | 0.4806 | 0.0000 | 1,102.9781 | 1,102.9781 | 0.3567 | | 1,111.8962 |
| Total | 0.8617 | 8.8523 | 7.3875 | 0.0114 | | 0.5224 | 0.5224 | | 0.4806 | 0.4806 | 0.0000 | 1,102.9781 | 1,102.9781 | 0.3567 | | 1,111.8962 |

Sweetwater CWT CalEEMod - San Diego 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 | 0.0150 | 0.4510 | 0.1149 | 1.1000e-003 | 0.0271 | 2.2100e-003 | 0.0293 | 7.8000e-003 | 2.1100e-003 | 9.9100e-003 | | 117.6160 | 117.6160 | 8.6800e-003 | | 117.8330 |
| Worker | 0.0330 | 0.0223 | 0.2551 | 7.6000e-004 | 0.0739 | 5.2000e-004 | 0.0745 | 0.0196 | 4.8000e-004 | 0.0201 | | 75.8472 | 75.8472 | 2.2600e-003 | | 75.9039 |
| Total | 0.0480 | 0.4733 | 0.3700 | 1.8600e-003 | 0.1010 | 2.7300e-003 | 0.1037 | 0.0274 | 2.5900e-003 | 0.0300 | | 193.4633 | 193.4633 | 0.0109 | | 193.7368 |

3.6 Paving - 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 | 0.7716 | 7.2266 | 7.1128 | 0.0113 | | 0.3950 | 0.3950 | | 0.3669 | 0.3669 | | 1,035.3926 | 1,035.3926 | 0.3016 | | 1,042.9323 |
| Paving | 0.0472 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Total | 0.8187 | 7.2266 | 7.1128 | 0.0113 | | 0.3950 | 0.3950 | | 0.3669 | 0.3669 | | 1,035.3926 | 1,035.3926 | 0.3016 | | 1,042.9323 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.6 Paving - 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 | 0.0661 | 0.0445 | 0.5102 | 1.5200e-003 | 0.1479 | 1.0400e-003 | 0.1489 | 0.0392 | 9.6000e-004 | 0.0402 | | 151.6945 | 151.6945 | 4.5300e-003 | | 151.8077 |
| Total | 0.0661 | 0.0445 | 0.5102 | 1.5200e-003 | 0.1479 | 1.0400e-003 | 0.1489 | 0.0392 | 9.6000e-004 | 0.0402 | | 151.6945 | 151.6945 | 4.5300e-003 | | 151.8077 |

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 | 0.7716 | 7.2266 | 7.1128 | 0.0113 | | 0.3950 | 0.3950 | | 0.3669 | 0.3669 | 0.0000 | 1,035.3926 | 1,035.3926 | 0.3016 | | 1,042.9323 |
| Paving | 0.0472 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Total | 0.8187 | 7.2266 | 7.1128 | 0.0113 | | 0.3950 | 0.3950 | | 0.3669 | 0.3669 | 0.0000 | 1,035.3926 | 1,035.3926 | 0.3016 | | 1,042.9323 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.6 Paving - 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 | 0.0661 | 0.0445 | 0.5102 | 1.5200e-003 | 0.1479 | 1.0400e-003 | 0.1489 | 0.0392 | 9.6000e-004 | 0.0402 | | 151.6945 | 151.6945 | 4.5300e-003 | | 151.8077 |
| Total | 0.0661 | 0.0445 | 0.5102 | 1.5200e-003 | 0.1479 | 1.0400e-003 | 0.1489 | 0.0392 | 9.6000e-004 | 0.0402 | | 151.6945 | 151.6945 | 4.5300e-003 | | 151.8077 |

3.7 Architectural Coating - 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 | | | | | |
| Archit. Coating | 31.6802 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2422 | 1.6838 | 1.8314 | 2.9700e-003 | | 0.1109 | 0.1109 | | 0.1109 | 0.1109 | | 281.4481 | 281.4481 | 0.0218 | | 281.9928 |
| Total | 31.9224 | 1.6838 | 1.8314 | 2.9700e-003 | | 0.1109 | 0.1109 | | 0.1109 | 0.1109 | | 281.4481 | 281.4481 | 0.0218 | | 281.9928 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.7 Architectural Coating - 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 | 7.3400e-003 | 4.9400e-003 | 0.0567 | 1.7000e-004 | 0.0164 | 1.2000e-004 | 0.0165 | 4.3600e-003 | 1.1000e-004 | 4.4600e-003 | | 16.8549 | 16.8549 | 5.0000e-004 | | 16.8675 |
| Total | 7.3400e-003 | 4.9400e-003 | 0.0567 | 1.7000e-004 | 0.0164 | 1.2000e-004 | 0.0165 | 4.3600e-003 | 1.1000e-004 | 4.4600e-003 | | 16.8549 | 16.8549 | 5.0000e-004 | | 16.8675 |

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 | 31.6802 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2422 | 1.6838 | 1.8314 | 2.9700e-003 | | 0.1109 | 0.1109 | | 0.1109 | 0.1109 | 0.0000 | 281.4481 | 281.4481 | 0.0218 | | 281.9928 |
| Total | 31.9224 | 1.6838 | 1.8314 | 2.9700e-003 | | 0.1109 | 0.1109 | | 0.1109 | 0.1109 | 0.0000 | 281.4481 | 281.4481 | 0.0218 | | 281.9928 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

3.7 Architectural Coating - 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 | 7.3400e-003 | 4.9400e-003 | 0.0567 | 1.7000e-004 | 0.0164 | 1.2000e-004 | 0.0165 | 4.3600e-003 | 1.1000e-004 | 4.4600e-003 | | 16.8549 | 16.8549 | 5.0000e-004 | | 16.8675 |
| Total | 7.3400e-003 | 4.9400e-003 | 0.0567 | 1.7000e-004 | 0.0164 | 1.2000e-004 | 0.0165 | 4.3600e-003 | 1.1000e-004 | 4.4600e-003 | | 16.8549 | 16.8549 | 5.0000e-004 | | 16.8675 |

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Sweetwater CWT CalEEMod - San Diego 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 | 0.0129 | 0.0536 | 0.1533 | 5.1000e-004 | 0.0416 | 4.9000e-004 | 0.0421 | 0.0111 | 4.6000e-004 | 0.0116 | | 51.6698 | 51.6698 | 2.7000e-003 | | 51.7373 |
| Unmitigated | 0.0129 | 0.0536 | 0.1533 | 5.1000e-004 | 0.0416 | 4.9000e-004 | 0.0421 | 0.0111 | 4.6000e-004 | 0.0116 | | 51.6698 | 51.6698 | 2.7000e-003 | | 51.7373 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 4.50 | 4.50 | 4.50 | 13,138 | 13,138 |
| General Light Industry | 2.22 | 2.22 | 2.22 | 6,467 | 6,467 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Total | 6.72 | 6.72 | 6.72 | 19,605 | 19,605 |

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 | 9.50 | 7.30 | 7.30 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| General Light Industry | 9.50 | 7.30 | 7.30 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| Other Asphalt Surfaces | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

4.4 Fleet Mix

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| General Light Industry | 0.588316 | 0.042913 | 0.184449 | 0.110793 | 0.017294 | 0.005558 | 0.015534 | 0.023021 | 0.001902 | 0.002024 | 0.006181 | 0.000745 | 0.001271 |
| Other Asphalt Surfaces | 0.588316 | 0.042913 | 0.184449 | 0.110793 | 0.017294 | 0.005558 | 0.015534 | 0.023021 | 0.001902 | 0.002024 | 0.006181 | 0.000745 | 0.001271 |

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|------------------------|--------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|-------------|----------|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.0129 | 0.1172 | 0.0985 | 7.0000e-004 | | 8.9100e-003 | 8.9100e-003 | | 8.9100e-003 | 8.9100e-003 | | 140.6416 | 140.6416 | 2.7000e-003 | 2.5800e-003 | 141.4774 |
| NaturalGas Unmitigated | 0.0129 | 0.1172 | 0.0985 | 7.0000e-004 | | 8.9100e-003 | 8.9100e-003 | | 8.9100e-003 | 8.9100e-003 | | 140.6416 | 140.6416 | 2.7000e-003 | 2.5800e-003 | 141.4774 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

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 | 394.331 | 4.2500e-003 | 0.0387 | 0.0325 | 2.3000e-004 | | 2.9400e-003 | 2.9400e-003 | | 2.9400e-003 | 2.9400e-003 | | 46.3919 | 46.3919 | 8.9000e-004 | 8.5000e-004 | 46.6675 |
| General Light Industry | 801.123 | 8.6400e-003 | 0.0785 | 0.0660 | 4.7000e-004 | | 5.9700e-003 | 5.9700e-003 | | 5.9700e-003 | 5.9700e-003 | | 94.2498 | 94.2498 | 1.8100e-003 | 1.7300e-003 | 94.8099 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0129 | 0.1172 | 0.0984 | 7.0000e-004 | | 8.9100e-003 | 8.9100e-003 | | 8.9100e-003 | 8.9100e-003 | | 140.6417 | 140.6417 | 2.7000e-003 | 2.5800e-003 | 141.4774 |

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 | 0.394331 | 4.2500e-003 | 0.0387 | 0.0325 | 2.3000e-004 | | 2.9400e-003 | 2.9400e-003 | | 2.9400e-003 | 2.9400e-003 | | 46.3919 | 46.3919 | 8.9000e-004 | 8.5000e-004 | 46.6675 |
| General Light Industry | 0.801123 | 8.6400e-003 | 0.0785 | 0.0660 | 4.7000e-004 | | 5.9700e-003 | 5.9700e-003 | | 5.9700e-003 | 5.9700e-003 | | 94.2498 | 94.2498 | 1.8100e-003 | 1.7300e-003 | 94.8099 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0129 | 0.1172 | 0.0984 | 7.0000e-004 | | 8.9100e-003 | 8.9100e-003 | | 8.9100e-003 | 8.9100e-003 | | 140.6417 | 140.6417 | 2.7000e-003 | 2.5800e-003 | 141.4774 |

6.0 Area Detail

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

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 | 0.3772 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |
| Unmitigated | 0.3772 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |

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 | 0.0868 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.2902 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 2.1000e-004 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |
| Total | 0.3773 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

6.2 Area by SubCategory**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|----------|--------------------|--------------------|--------------------|-----|--------------------|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.0868 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.2902 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 2.1000e-004 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |
| Total | 0.3773 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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

10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Sweetwater CWT CalEEMod - San Diego Air Basin, Summer

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

Boilers

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

User Defined Equipment

| Equipment Type | Number |
|----------------|--------|
|----------------|--------|

11.0 Vegetation

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

Sweetwater CWT CalEEMod

San Diego Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|------------------------|------|----------|-------------|--------------------|------------|
| General Light Industry | 9.00 | 1000sqft | 0.21 | 9,000.00 | 0 |
| Other Asphalt Surfaces | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| General Light Industry | 4.43 | 1000sqft | 0.10 | 4,430.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|---------------------------------|--------------------------|---------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.6 | Precipitation Freq (Days) | 40 |
| Climate Zone | 10 | | | Operational Year | 2020 |
| Utility Company | San Diego Gas & Electric | | | | |
| CO2 Intensity (lb/MW hr) | 720.49 | CH4 Intensity (lb/MW hr) | 0.029 | N2O Intensity (lb/MW hr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tank retaining wall slab will be 9000 sq ft; assumed general light industry

Road extension of 400 ft L x 20 ft W; assumed other asphalt surfaces

Piping extension, total of 2215 ft L x 2 ft W (assumed); assumed general light industry

Construction Phase - Construction would take place for approximately nine months, from October 2019 through July 2020

Grading - 2400 cubic yards of material imported.

Vehicle Trips - There will be 10 trips per year for O&M; proposed trip #s are very conservative.

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

| Table Name | Column Name | Default Value | New Value |
|----------------------|---------------------|---------------|------------|
| tblConstructionPhase | NumDays | 5.00 | 10.00 |
| tblConstructionPhase | NumDays | 100.00 | 150.00 |
| tblConstructionPhase | NumDays | 2.00 | 15.00 |
| tblConstructionPhase | NumDays | 5.00 | 10.00 |
| tblConstructionPhase | NumDays | 1.00 | 15.00 |
| tblConstructionPhase | PhaseEndDate | 3/19/2020 | 7/20/2020 |
| tblConstructionPhase | PhaseEndDate | 3/5/2020 | 6/22/2020 |
| tblConstructionPhase | PhaseEndDate | 10/17/2019 | 11/25/2019 |
| tblConstructionPhase | PhaseEndDate | 3/12/2020 | 7/6/2020 |
| tblConstructionPhase | PhaseEndDate | 10/15/2019 | 11/4/2019 |
| tblConstructionPhase | PhaseStartDate | 3/13/2020 | 7/7/2020 |
| tblConstructionPhase | PhaseStartDate | 10/18/2019 | 11/26/2019 |
| tblConstructionPhase | PhaseStartDate | 10/16/2019 | 11/5/2019 |
| tblConstructionPhase | PhaseStartDate | 3/6/2020 | 6/23/2020 |
| tblGrading | AcresOfGrading | 7.50 | 0.50 |
| tblGrading | MaterialImported | 0.00 | 2,400.00 |
| tblGrading | MaterialSiltContent | 6.90 | 4.30 |
| tblGrading | MaterialSiltContent | 6.90 | 4.30 |
| tblGrading | MeanVehicleSpeed | 7.10 | 40.00 |
| tblGrading | MeanVehicleSpeed | 7.10 | 40.00 |
| tblVehicleTrips | ST_TR | 1.32 | 0.50 |
| tblVehicleTrips | SU_TR | 0.68 | 0.50 |
| tblVehicleTrips | WD_TR | 6.97 | 0.50 |

2.0 Emissions Summary

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|---------|---------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|------------|------------|--------|--------|------------|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2019 | 1.0167 | 15.0014 | 7.9841 | 0.0258 | 1.5350 | 0.6094 | 1.9257 | 0.3976 | 0.5608 | 0.7694 | 0.0000 | 2,707.8324 | 2,707.8324 | 0.4654 | 0.0000 | 2,719.4677 |
| 2020 | 31.9307 | 9.3280 | 7.7555 | 0.0132 | 0.1479 | 0.5251 | 0.6262 | 0.0392 | 0.4832 | 0.5106 | 0.0000 | 1,288.7649 | 1,288.7649 | 0.3681 | 0.0000 | 1,297.9671 |
| Maximum | 31.9307 | 15.0014 | 7.9841 | 0.0258 | 1.5350 | 0.6094 | 1.9257 | 0.3976 | 0.5608 | 0.7694 | 0.0000 | 2,707.8324 | 2,707.8324 | 0.4654 | 0.0000 | 2,719.4677 |

Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|---------|---------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|------------|------------|--------|--------|------------|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2019 | 1.0167 | 15.0014 | 7.9841 | 0.0258 | 1.5350 | 0.6094 | 1.9257 | 0.3976 | 0.5608 | 0.7694 | 0.0000 | 2,707.8324 | 2,707.8324 | 0.4654 | 0.0000 | 2,719.4677 |
| 2020 | 31.9307 | 9.3280 | 7.7555 | 0.0132 | 0.1479 | 0.5251 | 0.6262 | 0.0392 | 0.4832 | 0.5106 | 0.0000 | 1,288.7649 | 1,288.7649 | 0.3681 | 0.0000 | 1,297.9671 |
| Maximum | 31.9307 | 15.0014 | 7.9841 | 0.0258 | 1.5350 | 0.6094 | 1.9257 | 0.3976 | 0.5608 | 0.7694 | 0.0000 | 2,707.8324 | 2,707.8324 | 0.4654 | 0.0000 | 2,719.4677 |

[illegible]

Sweetwater CWT CalEEMod - San Diego 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 | 0.3772 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |
| Energy | 0.0129 | 0.1172 | 0.0985 | 7.0000e-004 | | 8.9100e-003 | 8.9100e-003 | | 8.9100e-003 | 8.9100e-003 | | 140.6416 | 140.6416 | 2.7000e-003 | 2.5800e-003 | 141.4774 |
| Mobile | 0.0126 | 0.0552 | 0.1507 | 4.8000e-004 | 0.0416 | 4.9000e-004 | 0.0421 | 0.0111 | 4.6000e-004 | 0.0116 | | 48.9977 | 48.9977 | 2.7100e-003 | | 49.0653 |
| Total | 0.4027 | 0.1725 | 0.2513 | 1.1800e-003 | 0.0416 | 9.4100e-003 | 0.0510 | 0.0111 | 9.3800e-003 | 0.0205 | | 189.6440 | 189.6440 | 5.4200e-003 | 2.5800e-003 | 190.5477 |

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 | 0.3772 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |
| Energy | 0.0129 | 0.1172 | 0.0985 | 7.0000e-004 | | 8.9100e-003 | 8.9100e-003 | | 8.9100e-003 | 8.9100e-003 | | 140.6416 | 140.6416 | 2.7000e-003 | 2.5800e-003 | 141.4774 |
| Mobile | 0.0126 | 0.0552 | 0.1507 | 4.8000e-004 | 0.0416 | 4.9000e-004 | 0.0421 | 0.0111 | 4.6000e-004 | 0.0116 | | 48.9977 | 48.9977 | 2.7100e-003 | | 49.0653 |
| Total | 0.4027 | 0.1725 | 0.2513 | 1.1800e-003 | 0.0416 | 9.4100e-003 | 0.0510 | 0.0111 | 9.3800e-003 | 0.0205 | | 189.6440 | 189.6440 | 5.4200e-003 | 2.5800e-003 | 190.5477 |

Sweetwater CWT CalEEMod - San Diego 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 |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

3.0 Construction Detail

Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|--------------|-----------------------|-----------------------|------------|------------|---------------|----------|-------------------|
| 1 | Demolition | Demolition | 10/1/2019 | 10/14/2019 | 5 | 10 | |
| 2 | Site Preparation | Site Preparation | 10/15/2019 | 11/4/2019 | 5 | 15 | |
| 3 | Grading | Grading | 11/5/2019 | 11/25/2019 | 5 | 15 | |
| 4 | Building Construction | Building Construction | 11/26/2019 | 6/22/2020 | 5 | 150 | |
| 5 | Paving | Paving | 6/23/2020 | 7/6/2020 | 5 | 10 | |
| 6 | Architectural Coating | Architectural Coating | 7/7/2020 | 7/20/2020 | 5 | 10 | |

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 20,145; Non-Residential Outdoor: 6,715; Striped Parking Area: 480 (Architectural Coating – sqft)

OffRoad Equipment

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Cement and Mortar Mixers | 4 | 6.00 | 9 | 0.56 |
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Grading | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Building Construction | Cranes | 1 | 4.00 | 231 | 0.29 |
| Building Construction | Forklifts | 2 | 6.00 | 89 | 0.20 |
| Site Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Paving | Pavers | 1 | 7.00 | 130 | 0.42 |
| Paving | Rollers | 1 | 7.00 | 80 | 0.38 |
| Demolition | Rubber Tired Dozers | 1 | 1.00 | 247 | 0.40 |
| Grading | Rubber Tired Dozers | 1 | 1.00 | 247 | 0.40 |
| Building Construction | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Demolition | Tractors/Loaders/Backhoes | 2 | 6.00 | 97 | 0.37 |
| Grading | Tractors/Loaders/Backhoes | 2 | 6.00 | 97 | 0.37 |
| Paving | Tractors/Loaders/Backhoes | 1 | 7.00 | 97 | 0.37 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |

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 | 4 | 10.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 2 | 5.00 | 0.00 | 300.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 4 | 10.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 5 | 9.00 | 4.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 2.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.1 Mitigation Measures Construction**3.2 Demolition - 2019****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 | 0.9530 | 8.6039 | 7.6917 | 0.0120 | | 0.5371 | 0.5371 | | 0.5125 | 0.5125 | | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |
| Total | 0.9530 | 8.6039 | 7.6917 | 0.0120 | | 0.5371 | 0.5371 | | 0.5125 | 0.5125 | | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.2 Demolition - 2019**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 | 0.0444 | 0.0308 | 0.2924 | 8.2000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 81.6914 | 81.6914 | 2.6400e-003 | | 81.7573 |
| Total | 0.0444 | 0.0308 | 0.2924 | 8.2000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 81.6914 | 81.6914 | 2.6400e-003 | | 81.7573 |

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 | 0.9530 | 8.6039 | 7.6917 | 0.0120 | | 0.5371 | 0.5371 | | 0.5125 | 0.5125 | 0.0000 | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |
| Total | 0.9530 | 8.6039 | 7.6917 | 0.0120 | | 0.5371 | 0.5371 | | 0.5125 | 0.5125 | 0.0000 | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.2 Demolition - 2019**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 | 0.0444 | 0.0308 | 0.2924 | 8.2000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 81.6914 | 81.6914 | 2.6400e-003 | | 81.7573 |
| Total | 0.0444 | 0.0308 | 0.2924 | 8.2000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 81.6914 | 81.6914 | 2.6400e-003 | | 81.7573 |

3.3 Site Preparation - 2019**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 | | | | | 1.1445 | 0.0000 | 1.1445 | 0.2910 | 0.0000 | 0.2910 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.7195 | 8.9170 | 4.1407 | 9.7500e-003 | | 0.3672 | 0.3672 | | 0.3378 | 0.3378 | | 965.1690 | 965.1690 | 0.3054 | | 972.8032 |
| Total | 0.7195 | 8.9170 | 4.1407 | 9.7500e-003 | 1.1445 | 0.3672 | 1.5117 | 0.2910 | 0.3378 | 0.6288 | | 965.1690 | 965.1690 | 0.3054 | | 972.8032 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.3 Site Preparation - 2019**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 | 0.1785 | 6.0690 | 1.3897 | 0.0156 | 0.3495 | 0.0232 | 0.3727 | 0.0958 | 0.0222 | 0.1180 | | 1,701.817 7 | 1,701.817 7 | 0.1587 | | 1,705.785 8 |
| 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 | 0.0222 | 0.0154 | 0.1462 | 4.1000e-004 | 0.0411 | 2.9000e-004 | 0.0414 | 0.0109 | 2.7000e-004 | 0.0112 | | 40.8457 | 40.8457 | 1.3200e-003 | | 40.8786 |
| Total | 0.2007 | 6.0844 | 1.5359 | 0.0160 | 0.3906 | 0.0235 | 0.4141 | 0.1067 | 0.0225 | 0.1291 | | 1,742.663 4 | 1,742.663 4 | 0.1601 | | 1,746.664 5 |

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 | | | | | 1.1445 | 0.0000 | 1.1445 | 0.2910 | 0.0000 | 0.2910 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.7195 | 8.9170 | 4.1407 | 9.7500e-003 | | 0.3672 | 0.3672 | | 0.3378 | 0.3378 | 0.0000 | 965.1690 | 965.1690 | 0.3054 | | 972.8032 |
| Total | 0.7195 | 8.9170 | 4.1407 | 9.7500e-003 | 1.1445 | 0.3672 | 1.5117 | 0.2910 | 0.3378 | 0.6288 | 0.0000 | 965.1690 | 965.1690 | 0.3054 | | 972.8032 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.3 Site Preparation - 2019**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 | 0.1785 | 6.0690 | 1.3897 | 0.0156 | 0.3495 | 0.0232 | 0.3727 | 0.0958 | 0.0222 | 0.1180 | | 1,701.817 7 | 1,701.817 7 | 0.1587 | | 1,705.785 8 |
| 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 | 0.0222 | 0.0154 | 0.1462 | 4.1000e-004 | 0.0411 | 2.9000e-004 | 0.0414 | 0.0109 | 2.7000e-004 | 0.0112 | | 40.8457 | 40.8457 | 1.3200e-003 | | 40.8786 |
| Total | 0.2007 | 6.0844 | 1.5359 | 0.0160 | 0.3906 | 0.0235 | 0.4141 | 0.1067 | 0.0225 | 0.1291 | | 1,742.663 4 | 1,742.663 4 | 0.1601 | | 1,746.664 5 |

3.4 Grading - 2019**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 | | | | | 0.3703 | 0.0000 | 0.3703 | 0.2346 | 0.0000 | 0.2346 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.9530 | 8.6039 | 7.6917 | 0.0120 | | 0.5371 | 0.5371 | | 0.5125 | 0.5125 | | 1,159.657 0 | 1,159.657 0 | 0.2211 | | 1,165.184 7 |
| Total | 0.9530 | 8.6039 | 7.6917 | 0.0120 | 0.3703 | 0.5371 | 0.9074 | 0.2346 | 0.5125 | 0.7471 | | 1,159.657 0 | 1,159.657 0 | 0.2211 | | 1,165.184 7 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.4 Grading - 2019**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 | 0.0444 | 0.0308 | 0.2924 | 8.2000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 81.6914 | 81.6914 | 2.6400e-003 | | 81.7573 |
| Total | 0.0444 | 0.0308 | 0.2924 | 8.2000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 81.6914 | 81.6914 | 2.6400e-003 | | 81.7573 |

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 | | | | | 0.3703 | 0.0000 | 0.3703 | 0.2346 | 0.0000 | 0.2346 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.9530 | 8.6039 | 7.6917 | 0.0120 | | 0.5371 | 0.5371 | | 0.5125 | 0.5125 | 0.0000 | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |
| Total | 0.9530 | 8.6039 | 7.6917 | 0.0120 | 0.3703 | 0.5371 | 0.9074 | 0.2346 | 0.5125 | 0.7471 | 0.0000 | 1,159.6570 | 1,159.6570 | 0.2211 | | 1,165.1847 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.4 Grading - 2019**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 | 0.0444 | 0.0308 | 0.2924 | 8.2000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 81.6914 | 81.6914 | 2.6400e-003 | | 81.7573 |
| Total | 0.0444 | 0.0308 | 0.2924 | 8.2000e-004 | 0.0822 | 5.9000e-004 | 0.0827 | 0.0218 | 5.4000e-004 | 0.0223 | | 81.6914 | 81.6914 | 2.6400e-003 | | 81.7573 |

3.5 Building Construction - 2019**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 | 0.9576 | 9.8207 | 7.5432 | 0.0114 | | 0.6054 | 0.6054 | | 0.5569 | 0.5569 | | 1,127.6696 | 1,127.6696 | 0.3568 | | 1,136.5892 |
| Total | 0.9576 | 9.8207 | 7.5432 | 0.0114 | | 0.6054 | 0.6054 | | 0.5569 | 0.5569 | | 1,127.6696 | 1,127.6696 | 0.3568 | | 1,136.5892 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.5 Building Construction - 2019**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 | 0.0192 | 0.4964 | 0.1420 | 1.0800e-003 | 0.0271 | 3.5100e-003 | 0.0306 | 7.8000e-003 | 3.3600e-003 | 0.0112 | | 115.4001 | 115.4001 | 9.7200e-003 | | 115.6432 |
| Worker | 0.0400 | 0.0277 | 0.2632 | 7.4000e-004 | 0.0739 | 5.3000e-004 | 0.0745 | 0.0196 | 4.9000e-004 | 0.0201 | | 73.5222 | 73.5222 | 2.3700e-003 | | 73.5816 |
| Total | 0.0592 | 0.5241 | 0.4051 | 1.8200e-003 | 0.1010 | 4.0400e-003 | 0.1051 | 0.0274 | 3.8500e-003 | 0.0313 | | 188.9223 | 188.9223 | 0.0121 | | 189.2248 |

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 | 0.9576 | 9.8207 | 7.5432 | 0.0114 | | 0.6054 | 0.6054 | | 0.5569 | 0.5569 | 0.0000 | 1,127.6696 | 1,127.6696 | 0.3568 | | 1,136.5892 |
| Total | 0.9576 | 9.8207 | 7.5432 | 0.0114 | | 0.6054 | 0.6054 | | 0.5569 | 0.5569 | 0.0000 | 1,127.6696 | 1,127.6696 | 0.3568 | | 1,136.5892 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.5 Building Construction - 2019**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 | 0.0192 | 0.4964 | 0.1420 | 1.0800e-003 | 0.0271 | 3.5100e-003 | 0.0306 | 7.8000e-003 | 3.3600e-003 | 0.0112 | | 115.4001 | 115.4001 | 9.7200e-003 | | 115.6432 |
| Worker | 0.0400 | 0.0277 | 0.2632 | 7.4000e-004 | 0.0739 | 5.3000e-004 | 0.0745 | 0.0196 | 4.9000e-004 | 0.0201 | | 73.5222 | 73.5222 | 2.3700e-003 | | 73.5816 |
| Total | 0.0592 | 0.5241 | 0.4051 | 1.8200e-003 | 0.1010 | 4.0400e-003 | 0.1051 | 0.0274 | 3.8500e-003 | 0.0313 | | 188.9223 | 188.9223 | 0.0121 | | 189.2248 |

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 | 0.8617 | 8.8523 | 7.3875 | 0.0114 | | 0.5224 | 0.5224 | | 0.4806 | 0.4806 | | 1,102.9781 | 1,102.9781 | 0.3567 | | 1,111.8962 |
| Total | 0.8617 | 8.8523 | 7.3875 | 0.0114 | | 0.5224 | 0.5224 | | 0.4806 | 0.4806 | | 1,102.9781 | 1,102.9781 | 0.3567 | | 1,111.8962 |

Sweetwater CWT CalEEMod - San Diego 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 | 0.0157 | 0.4507 | 0.1275 | 1.0700e-003 | 0.0271 | 2.2500e-003 | 0.0293 | 7.8000e-003 | 2.1500e-003 | 9.9500e-003 | | 114.5849 | 114.5849 | 9.2200e-003 | | 114.8154 |
| Worker | 0.0374 | 0.0250 | 0.2405 | 7.1000e-004 | 0.0739 | 5.2000e-004 | 0.0745 | 0.0196 | 4.8000e-004 | 0.0201 | | 71.2019 | 71.2019 | 2.1400e-003 | | 71.2555 |
| Total | 0.0531 | 0.4757 | 0.3680 | 1.7800e-003 | 0.1010 | 2.7700e-003 | 0.1038 | 0.0274 | 2.6300e-003 | 0.0300 | | 185.7868 | 185.7868 | 0.0114 | | 186.0709 |

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 | 0.8617 | 8.8523 | 7.3875 | 0.0114 | | 0.5224 | 0.5224 | | 0.4806 | 0.4806 | 0.0000 | 1,102.9781 | 1,102.9781 | 0.3567 | | 1,111.8962 |
| Total | 0.8617 | 8.8523 | 7.3875 | 0.0114 | | 0.5224 | 0.5224 | | 0.4806 | 0.4806 | 0.0000 | 1,102.9781 | 1,102.9781 | 0.3567 | | 1,111.8962 |

Sweetwater CWT CalEEMod - San Diego 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 | 0.0157 | 0.4507 | 0.1275 | 1.0700e-003 | 0.0271 | 2.2500e-003 | 0.0293 | 7.8000e-003 | 2.1500e-003 | 9.9500e-003 | | 114.5849 | 114.5849 | 9.2200e-003 | | 114.8154 |
| Worker | 0.0374 | 0.0250 | 0.2405 | 7.1000e-004 | 0.0739 | 5.2000e-004 | 0.0745 | 0.0196 | 4.8000e-004 | 0.0201 | | 71.2019 | 71.2019 | 2.1400e-003 | | 71.2555 |
| Total | 0.0531 | 0.4757 | 0.3680 | 1.7800e-003 | 0.1010 | 2.7700e-003 | 0.1038 | 0.0274 | 2.6300e-003 | 0.0300 | | 185.7868 | 185.7868 | 0.0114 | | 186.0709 |

3.6 Paving - 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 | 0.7716 | 7.2266 | 7.1128 | 0.0113 | | 0.3950 | 0.3950 | | 0.3669 | 0.3669 | | 1,035.3926 | 1,035.3926 | 0.3016 | | 1,042.9323 |
| Paving | 0.0472 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Total | 0.8187 | 7.2266 | 7.1128 | 0.0113 | | 0.3950 | 0.3950 | | 0.3669 | 0.3669 | | 1,035.3926 | 1,035.3926 | 0.3016 | | 1,042.9323 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.6 Paving - 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 | 0.0748 | 0.0500 | 0.4810 | 1.4300e-003 | 0.1479 | 1.0400e-003 | 0.1489 | 0.0392 | 9.6000e-004 | 0.0402 | | 142.4038 | 142.4038 | 4.2900e-003 | | 142.5109 |
| Total | 0.0748 | 0.0500 | 0.4810 | 1.4300e-003 | 0.1479 | 1.0400e-003 | 0.1489 | 0.0392 | 9.6000e-004 | 0.0402 | | 142.4038 | 142.4038 | 4.2900e-003 | | 142.5109 |

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 | 0.7716 | 7.2266 | 7.1128 | 0.0113 | | 0.3950 | 0.3950 | | 0.3669 | 0.3669 | 0.0000 | 1,035.3926 | 1,035.3926 | 0.3016 | | 1,042.9323 |
| Paving | 0.0472 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Total | 0.8187 | 7.2266 | 7.1128 | 0.0113 | | 0.3950 | 0.3950 | | 0.3669 | 0.3669 | 0.0000 | 1,035.3926 | 1,035.3926 | 0.3016 | | 1,042.9323 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.6 Paving - 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 | 0.0748 | 0.0500 | 0.4810 | 1.4300e-003 | 0.1479 | 1.0400e-003 | 0.1489 | 0.0392 | 9.6000e-004 | 0.0402 | | 142.4038 | 142.4038 | 4.2900e-003 | | 142.5109 |
| Total | 0.0748 | 0.0500 | 0.4810 | 1.4300e-003 | 0.1479 | 1.0400e-003 | 0.1489 | 0.0392 | 9.6000e-004 | 0.0402 | | 142.4038 | 142.4038 | 4.2900e-003 | | 142.5109 |

3.7 Architectural Coating - 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 | | | | | |
| Archit. Coating | 31.6802 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2422 | 1.6838 | 1.8314 | 2.9700e-003 | | 0.1109 | 0.1109 | | 0.1109 | 0.1109 | | 281.4481 | 281.4481 | 0.0218 | | 281.9928 |
| Total | 31.9224 | 1.6838 | 1.8314 | 2.9700e-003 | | 0.1109 | 0.1109 | | 0.1109 | 0.1109 | | 281.4481 | 281.4481 | 0.0218 | | 281.9928 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.7 Architectural Coating - 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 | 8.3100e-003 | 5.5500e-003 | 0.0535 | 1.6000e-004 | 0.0164 | 1.2000e-004 | 0.0165 | 4.3600e-003 | 1.1000e-004 | 4.4600e-003 | | 15.8226 | 15.8226 | 4.8000e-004 | | 15.8346 |
| Total | 8.3100e-003 | 5.5500e-003 | 0.0535 | 1.6000e-004 | 0.0164 | 1.2000e-004 | 0.0165 | 4.3600e-003 | 1.1000e-004 | 4.4600e-003 | | 15.8226 | 15.8226 | 4.8000e-004 | | 15.8346 |

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 | 31.6802 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2422 | 1.6838 | 1.8314 | 2.9700e-003 | | 0.1109 | 0.1109 | | 0.1109 | 0.1109 | 0.0000 | 281.4481 | 281.4481 | 0.0218 | | 281.9928 |
| Total | 31.9224 | 1.6838 | 1.8314 | 2.9700e-003 | | 0.1109 | 0.1109 | | 0.1109 | 0.1109 | 0.0000 | 281.4481 | 281.4481 | 0.0218 | | 281.9928 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

3.7 Architectural Coating - 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 | 8.3100e-003 | 5.5500e-003 | 0.0535 | 1.6000e-004 | 0.0164 | 1.2000e-004 | 0.0165 | 4.3600e-003 | 1.1000e-004 | 4.4600e-003 | | 15.8226 | 15.8226 | 4.8000e-004 | | 15.8346 |
| Total | 8.3100e-003 | 5.5500e-003 | 0.0535 | 1.6000e-004 | 0.0164 | 1.2000e-004 | 0.0165 | 4.3600e-003 | 1.1000e-004 | 4.4600e-003 | | 15.8226 | 15.8226 | 4.8000e-004 | | 15.8346 |

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Sweetwater CWT CalEEMod - San Diego 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 | 0.0126 | 0.0552 | 0.1507 | 4.8000e-004 | 0.0416 | 4.9000e-004 | 0.0421 | 0.0111 | 4.6000e-004 | 0.0116 | | 48.9977 | 48.9977 | 2.7100e-003 | | 49.0653 |
| Unmitigated | 0.0126 | 0.0552 | 0.1507 | 4.8000e-004 | 0.0416 | 4.9000e-004 | 0.0421 | 0.0111 | 4.6000e-004 | 0.0116 | | 48.9977 | 48.9977 | 2.7100e-003 | | 49.0653 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 4.50 | 4.50 | 4.50 | 13,138 | 13,138 |
| General Light Industry | 2.22 | 2.22 | 2.22 | 6,467 | 6,467 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Total | 6.72 | 6.72 | 6.72 | 19,605 | 19,605 |

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 | 9.50 | 7.30 | 7.30 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| General Light Industry | 9.50 | 7.30 | 7.30 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| Other Asphalt Surfaces | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

4.4 Fleet Mix

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| General Light Industry | 0.588316 | 0.042913 | 0.184449 | 0.110793 | 0.017294 | 0.005558 | 0.015534 | 0.023021 | 0.001902 | 0.002024 | 0.006181 | 0.000745 | 0.001271 |
| Other Asphalt Surfaces | 0.588316 | 0.042913 | 0.184449 | 0.110793 | 0.017294 | 0.005558 | 0.015534 | 0.023021 | 0.001902 | 0.002024 | 0.006181 | 0.000745 | 0.001271 |

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|------------------------|--------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|-------------|----------|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.0129 | 0.1172 | 0.0985 | 7.0000e-004 | | 8.9100e-003 | 8.9100e-003 | | 8.9100e-003 | 8.9100e-003 | | 140.6416 | 140.6416 | 2.7000e-003 | 2.5800e-003 | 141.4774 |
| NaturalGas Unmitigated | 0.0129 | 0.1172 | 0.0985 | 7.0000e-004 | | 8.9100e-003 | 8.9100e-003 | | 8.9100e-003 | 8.9100e-003 | | 140.6416 | 140.6416 | 2.7000e-003 | 2.5800e-003 | 141.4774 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

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 | 394.331 | 4.2500e-003 | 0.0387 | 0.0325 | 2.3000e-004 | | 2.9400e-003 | 2.9400e-003 | | 2.9400e-003 | 2.9400e-003 | | 46.3919 | 46.3919 | 8.9000e-004 | 8.5000e-004 | 46.6675 |
| General Light Industry | 801.123 | 8.6400e-003 | 0.0785 | 0.0660 | 4.7000e-004 | | 5.9700e-003 | 5.9700e-003 | | 5.9700e-003 | 5.9700e-003 | | 94.2498 | 94.2498 | 1.8100e-003 | 1.7300e-003 | 94.8099 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0129 | 0.1172 | 0.0984 | 7.0000e-004 | | 8.9100e-003 | 8.9100e-003 | | 8.9100e-003 | 8.9100e-003 | | 140.6417 | 140.6417 | 2.7000e-003 | 2.5800e-003 | 141.4774 |

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 | 0.394331 | 4.2500e-003 | 0.0387 | 0.0325 | 2.3000e-004 | | 2.9400e-003 | 2.9400e-003 | | 2.9400e-003 | 2.9400e-003 | | 46.3919 | 46.3919 | 8.9000e-004 | 8.5000e-004 | 46.6675 |
| General Light Industry | 0.801123 | 8.6400e-003 | 0.0785 | 0.0660 | 4.7000e-004 | | 5.9700e-003 | 5.9700e-003 | | 5.9700e-003 | 5.9700e-003 | | 94.2498 | 94.2498 | 1.8100e-003 | 1.7300e-003 | 94.8099 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0129 | 0.1172 | 0.0984 | 7.0000e-004 | | 8.9100e-003 | 8.9100e-003 | | 8.9100e-003 | 8.9100e-003 | | 140.6417 | 140.6417 | 2.7000e-003 | 2.5800e-003 | 141.4774 |

6.0 Area Detail

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

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 | 0.3772 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |
| Unmitigated | 0.3772 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |

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 | 0.0868 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.2902 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 2.1000e-004 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |
| Total | 0.3773 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

6.2 Area by SubCategory**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|----------|--------------------|--------------------|--------------------|-----|--------------------|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.0868 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.2902 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 2.1000e-004 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |
| Total | 0.3773 | 2.0000e-005 | 2.2000e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | | 4.6900e-003 | 4.6900e-003 | 1.0000e-005 | | 5.0000e-003 |

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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

10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Sweetwater CWT CalEEMod - San Diego Air Basin, Winter

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

Boilers

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

User Defined Equipment

| Equipment Type | Number |
|----------------|--------|
|----------------|--------|

11.0 Vegetation


Appendix B

**Biological Resources Letter and
Focused Species Survey
Reports**



550 West C Street
Suite 750
San Diego, CA 92101
619.719.4200 phone
619.719.4201 fax

www.esassoc.com

| | |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Report: | Biological Resources Letter Report |
| Date: | November 17, 2020 |
| Project Name: | Central Wheeler Tank and System Improvements Project |
| Project Number(s): | ESA No. D150772.00 |
| Project Proponent: | Erick Del Bosque, PE Engineering Manager Sweetwater Authority edelbosque@sweetwater.org ; (619) 409-6752 |
| Prepared for: | Sweetwater Authority |
| Prepared by: | Cailin Lyons Principal Biologist Environmental Science Associates (ESA) cl Lyons@esassoc.com |
| Signature of Preparer: |  |

1. Summary

ESA, on behalf of the Sweetwater Authority (SWA), has prepared this Biological Resources Letter Report for the proposed Central Wheeler Tank and System Improvements Project (project) located in the unincorporated community of Sunnyside in San Diego County (**Figure 1**). The project would involve the construction of a new water storage tank and water transmission mains. ESA conducted a biological reconnaissance survey on May 8, 2019 and focused surveys were also conducted in 2019 by others for Otay tarplant (*Deinandra conjugens*), Quino checkerspot butterfly (*Euphydryas editha quino*), coastal California gnatcatcher (*Poliophtila californica californica*), and burrowing owl (*Athene cunicularia*). Based on the reconnaissance survey and focused surveys, it was determined the project would result in potentially significant impacts to vegetation communities and habitats, sensitive plants, and sensitive wildlife. Proposed mitigation to reduce impacts to less than significant includes habitat-based mitigation and pre-construction surveys for Otay tarplant, nesting birds, burrowing owl, and coastal California gnatcatcher.

2. Introduction

The 2015 Water Distribution System Master Plan (Master Plan) evaluated the SWA's transmission, pumping, storage and distribution network and made recommendations to meet anticipated demands through the year 2040. The current requirements to satisfy daily water demands in the Wheeler Pressure Zone is 0.60 million gallons per day (MGD) and the projected demand is 0.84 MGD by 2040. The existing Wheeler Tank was constructed in 1952 and has an operating storage capacity of 0.36 million

gallons (MG), but operates at a reduced capacity of 0.25 MG since the tank does not meet structural stability requirements for seismic activity. The purpose of the project is to improve reliability of the water distribution system in the current Wheeler Pressure Zone and a portion of the Gravity Pressure Zone, per the recommendations of the Master Plan. The project would involve construction of a new 0.8 MG welded steel water storage tank (Central-Wheeler Tank) within a hillside in an undeveloped portion of land owned by the SWA and construction of associated water drainage and conveyance pipelines to improve reliability of water distribution within the SWA's Wheeler and Gravity Pressure Zones (**Figure 2**). Project facilities would occur within public rights-of-way, within property currently owned by the SWA, or easements to be acquired by SWA.

3. Site Description and Physiography

The 22.7-acre biological study area (BSA) is located in the unincorporated community of Sunnyside in San Diego County, California, just east of the unincorporated community of Bonita. The northern portion of the BSA is located on Sweetwater Reservoir property, approximately 1,260 feet northwest of the intersection of San Miguel Road and Summit Meadow Road. The southern portion of the BSA is located in the right-of-way for San Miguel Road. Surrounding land uses include single family residential homes, Sweetwater Summit Regional Park, and Sweetwater Reservoir, which includes a trail system and recreational fishing.

The BSA is within the Sweetwater River watershed, and has elevations ranging between approximately 240 and 370 feet above mean sea level. Soil in the BSA consist of Olivenhein cobbly-loam and Diablo clay (USDA 2019). Slopes in the BSA range from 9 to 91 percent gradients, with a majority of the BSA consisting of gently sloping terrain with small areas of steep slopes located adjacent to the Clean Fill Site and dam. Slope aspects include northern, eastern, and western aspects, with the predominant aspect on the site being east.

4. Survey Methods

Biological Reconnaissance Survey

Prior to conducting the biological reconnaissance survey, a review of publicly available data was conducted to determine the potential for special-status species to occur within the BSA. The review included data provided by U.S. Fish and Wildlife Service (USFWS) (USFWS 2019a and 2019b), California Natural Diversity Database ([CNDDDB]; CDFW 2019), and California Native Plant Society ([CNPS]; CNPS 2019). Additionally, the National Wetlands Inventory (NWI; USFWS 2019c) was reviewed for the presence of potential wetlands on-site. ESA also referenced previous survey reports of projects that encompassed portions of the study area (Amec Foster Wheeler 2017; McMillan Biological Consulting 2006; and RECON 2002, 2009) as well as consulted SWA's Biologist, P. Famolaro, on the known locales or proximities of sensitive species to the BSA.

ESA biologist Cailin Lyons conducted the biological reconnaissance survey within the 22.7-acre BSA on May 8, 2019. Vegetation communities were mapped using a Global Positioning System (GPS) and follow Oberbauer et al. (2008), which is based on Holland's 1986 Preliminary Descriptions of the Terrestrial

Natural Communities of California. All plant species observed on-site were also noted, and plants that could not be identified in the field were identified later using a taxonomic key. The survey also included a directed search for sensitive plants that would have been apparent during the time of the survey. Animal species observed directly or detected from calls or other sign were also noted. During the field survey, habitats were also assessed for their potential to support special-status species. Occurrence potential for special-status species was evaluated based on the following criteria:

- **Present:** The species or vegetation community/habitat was observed within the BSA and/or immediate vicinity during surveys.
- **High Potential:** The BSA and/or immediate vicinity provide high quality or optimal habitat (i.e., soils, vegetation assemblage, and topography) for a particular species and/or the species has been previously reported within the BSA, but was not observed during focused protocol surveys and/or botanical surveys.
- **Moderate Potential:** The BSA and/or immediate vicinity provides moderately suitable habitat for a particular species. For example, proper soils may be present, but the desired vegetation assemblage or density is less than optimal; or soils and vegetation are suitable, but the site is outside of the known elevation range of the species.
- **Low Potential:** The BSA and/or immediate vicinity provides low quality habitat for a particular species, such as improper soils, disturbed or otherwise degraded habitat, improper assemblage of desired vegetation, and/or the site is outside of the known elevation range of the species.
- **Not Expected or Not Present:** The BSA and/or immediate vicinity does not provide suitable habitat necessary to support the species; the site is located outside of the known geographic range of the species; or the site contains suitable habitat but species was not detected during focused/protocol surveys or botanical surveys conducted during optimal timing and climatic conditions.

Quino Checkerspot Butterfly Habitat Assessment

A Quino checkerspot butterfly habitat assessment was conducted on February 12, 2019 by Wood biologist Erika Eidson (Recovery Permit TE 051236-3) (Attachment A). The habitat assessment consisted of walking meandering transects throughout the 22.7-acre BSA while assessing the suitability of the habitat and searching for Quino checkerspot butterfly host plants. The presence of potential QCB nectar sources was also evaluated. The habitat assessment identified potentially suitable habitat as defined by the *USFWS Quino Checkerspot Butterfly Survey Guidelines* (USFWS 2014) and also assessed the quality of this suitable habitat. Potentially suitable habitat was assessed based on the quality of the habitat, quality of the surrounding habitat, nectar sources, and presence of host plants. In addition to the habitat assessment, reports provided by the SWA of previous Quino checkerspot butterfly surveys and habitat assessments conducted in the BSA and its immediate vicinity were reviewed, which included protocol butterfly surveys encompassing the entire BSA in 2000 and 2017, as well as the northern portion of the BSA in 2002-2004 and 2009. All of the surveys had negative survey results for Quino checkerspot butterfly.

Coastal California Gnatcatcher Surveys

A total of nine protocol surveys for coastal California gnatcatcher were conducted within the 22.7-acre BSA in between March 22 and May 31, 2019 by SWA Biologist Pete Famolaro under Recovery Permit TE-813431-7 (Attachment B). Surveys followed the methodologies set forth in the *Coastal California gnatcatcher (Poliophtila californica californica) Presence/Absence Survey Protocol* (USFWS 1997). Surveys were performed by slowly traversing hillsides and available access roads, with taped vocalizations used to solicit coastal California gnatcatcher response where warranted by habitat conditions. The total number of surveys conducted exceeds the minimum requirement of six surveys between March 15 and June 30 for non-participating Natural Communities Conservation Project (NCCP) jurisdictions.

Burrowing Owl Surveys

A total of four protocol surveys for burrowing owl were conducted within the 22.7-acre BSA by SWA Biologist Pete Famolaro (Attachment C). Surveys were conducted between March 26 and June 28, 2019 and generally followed the methodologies set forth in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). The protocol was modified to include transects of the entire study area only during the first survey. The following surveys used a combination of traversing roads and trails by foot in and around the study area, and binocular inspection from higher vantage points. California ground squirrel (*Otopermophilus beecheyi*) burrows were also inspected during each survey to determine burrowing owl presence and/or sign (e.g. owl pellets, owl feathers, prey remains, whitewash, etc.) or absence. Burrow inspections were also performed at California ground squirrel burrows immediately east of the BSA where burrowing owl was previously observed.

Otay Tarplant Surveys

A total of four focused surveys for Otay tarplant were conducted within the 22.7-acre BSA by SWA Biologist Pete Famolaro (Attachment D). Surveys were conducted between May 28 and June 26, 2019, during the peak blooming period for this species. Surveys consisted of foot traverse of the non-native grassland and disturbed habitat within the BSA to search for Otay tarplant. Prior to each survey, one of three Otay tarplant reference sites on the Sweetwater Reservoir property were checked on the same day to gauge flowering status and detectability.

5. Survey Results

Botanical Resources

The BSA supports a relative low diversity of plants, with non-native plant species contributing a majority of the plant cover. A total of 41 plant species were observed within the BSA during the biological reconnaissance survey by ESA, including 9 native species and 32 non-native species. All plant species observed within the BSA during the reconnaissance survey are listed in the floral compendium in **Attachment E**.

Wildlife Resources

A total of 11 wildlife species were observed or detected within the BSA during the reconnaissance survey by ESA. Birds were the most common wildlife observed on site, with seven species observed. Mammals comprised the remaining two species observed on site. All wildlife species observed or detected within the BSA during the reconnaissance survey are listed in the faunal compendium in **Attachment F**.

Vegetation Communities and Habitats

The BSA contains three vegetation communities and land cover types: non-native grassland, disturbed habitat, and urban/developed (**Figure 3**). The acreages of each vegetation community and land cover type within the BSA are summarized in **Table 1**.

TABLE 1
VEGETATION COMMUNITIES AND LAND COVER TYPES WITHIN THE BSA

| Vegetation Community/Land Cover Type | Acreage |
|-----------------------------------------|-------------|
| Sensitive Vegetation Communities | |
| Non-native grassland (42200) | 8.4 |
| Other Land Cover Types | |
| Disturbed Habitat (11300) | 7.8 |
| Urban/Developed (12000) | 6.5 |
| Total Acres | 22.7 |

Non-Native Grassland (42200)

Non-native grassland is characterized by a dense to sparse cover of annual grasses, often associated with annual forbs. Characteristic species include wild oats (*Avena* sp.), bromes (*Bromus* spp.), filaree (*Erodium* sp.), and mustard (*Brassica* sp.). Depending on past disturbance and annual rainfall, annual forbs may be the dominant species in some areas; however, it is presumed that grasses will become a dominant component of the plant cover (Oberbauer et al. 2009).

Non-native grassland occurs within the northern portion of the BSA, surrounding the Central Wheeler Tank Site. Within this area, non-native grasses such as wild oats (*Avena* sp.), ripgut grass (*Bromus diandrus*), and Italian ryegrass (*Festuca perennis*) comprise a dominant portion of the plant cover (e.g. greater than 50% relative cover). Non-native grassland is considered a sensitive vegetation community due to its functional value as raptor foraging habitat and for wildlife movement/dispersal.

Disturbed Habitat (11300)

Disturbed habitat consists of areas that have been physically disturbed by previous legal human activity and are no longer recognizable as a native or naturalized vegetation association, but continue to retain a soil substrate. Typically, vegetation, if present, is nearly exclusively composed of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance, or shows signs of past or

present animal usage that removes any capability of providing viable natural habitat for uses other than dispersal (Oberbauer et al. 2008).

Disturbed habitat occurs within the southern portion of the BSA. Within the study area, this land cover type is dominated by non-native forbs, including crowndaisy (*Glebionis coronarium*) and black mustard (*Brassica nigra*). A minor amount of native shrubs occurs sparsely within the disturbed habitat, including desertbroom (*Baccharis sarothroides*) and mulefat (*Baccharis salicifolia*). This mapping unit includes a line of mature trees, including pine (*Pinus* sp.), coast live oak (*Quercus agrifolia*), sycamore (*Platanus* sp.), and eucalyptus (*Eucalyptus* sp.) trees, in addition to an acacia (*Acacia* sp.) shrub line that is part of the landscaping of Summit Meadow Road and the Sweetwater Summit Regional Park.

Urban/Developed (12000)

Developed areas include areas that have been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that often require irrigation (Oberbauer et al. 2008).

Developed areas within the BSA include paved roadways (Summit Meadow Road and San Miguel Road), dirt access roads, and a graded area that contains the Clean Fill Site. These areas are generally devoid of vegetation.

Sensitive Species

Sensitive species are those recognized by federal, state, or local agencies as being potentially vulnerable to impacts because of rarity, local or regional reductions in population numbers, isolation/restricted genetic flow, or other factors. For the purposes of the report, species known to occur or with high potential to occur within the BSA are described below. A comprehensive list of sensitive plant and wildlife species with potential for occurrence within the BSA based on the records search results is presented in **Attachment G** and **Attachment H**, and includes those species with potential for occurrence based on species range and habitat conditions.

Plants

One sensitive plant species, San Diego viguiera (*Bahiopsis laciniata*), was observed within the disturbed habitat in the BSA during the surveys (Figure 3). One additional plant species, Otay tarplant, has high potential to occur within the BSA. Otay tarplant was not detected during focused surveys conducted in spring 2019; however, the BSA occurs within designated critical habitat for this species and contains disturbed habitat and non-native grassland with suitable clay soils for this species to occur. Additionally, Otay tarplant was previously documented within the BSA in June 2017, but was absent in earlier focused searches (Attachment D). Therefore, outside of the known locale, Otay tarplant is considered to have a moderate to high potential to occur within the non-native grassland and disturbed habitat within the BSA. Additionally, small-flowered morning-glory (*Convolvulus simulans*) has been recorded immediately adjacent to the BSA in similar non-native grassland habitat (McMillan 2006, RECON 2009). Although no small-flowered morning glory were detected in the BSA during the survey, the potential for occurrence

is considered high due to the close proximity of these known locales and similar contiguous habitat conditions.

Wildlife

One sensitive wildlife species, horned lark (*Eremophila alpestris*), was observed within the BSA during surveys (Figure 3). An additional fourteen wildlife species are known to occur or have a high or moderate potential to occur within the BSA: coastal California gnatcatcher, burrowing owl, grasshopper sparrow (*Ammodramus savannarum*), Cooper's hawk (*Accipiter cooperii*), loggerhead shrike (*Lanius ludovicianus*), Coronado skink (*Plestiodon skiltonianus interparietalis*), orange-throated whiptail (*Aspidoscelis hyperythra*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), western mastiff bat (*Eumops perotis californicus*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), Mexican long-tongued bat (*Choeronycteris mexicana*), big free-tailed bat (*Nyctinomops macrotis*), western red bat (*Lasiurus blossevillii*), and hoary bat (*Lasiurus cinereus*). Additionally, it should be noted that the Quino checkerspot butterfly habitat assessment determined this species has a low potential to occur based on the lack of host plants and previous negative survey results for protocol surveys encompassing the entire BSA in 2000 and 2017, as well as the northern portion of the BSA in 2002-2004 and 2009 (Attachment A).

California horned lark. This species is a CDFW watch list species. California horned lark was observed within the BSA in the area associated within the clean fill site during protocol surveys conducted in 2019 (Attachment B). No breeding or nesting behavior was observed during the time of the surveys (Attachment B). However, this species has a high potential to nest within the BSA due to suitable bare ground for nesting.

Burrowing owl. This species is a state species of special concern. Burrowing owl was not observed within the BSA during protocol surveys conducted in 2019 (Attachment C). However, suitable burrows exist within the disturbed habitat on-site in the western portion of the BSA and a wintering owl was observed within the BSA in 2007, as well as immediately adjacent to the BSA in fall/winter 2018-19 (Attachment C). Though the BSA is not known to support a breeding population of this species, this species is known to use the BSA for wintering and has high potential to occur.

Coastal California gnatcatcher. This species is federally endangered and a state species of special concern. Coastal California gnatcatcher was not observed within the BSA during protocol surveys conducted in 2019 (Attachment B). However, observations of non-breeding individuals were incidentally observed within the BSA in 2007, and immediately adjacent to the BSA in 2018 (Attachment B). Though this species is not expected to nest within the BSA due to the lack of suitable coastal sage scrub habitat for nesting, there is a high potential for this species to occur on-site as wintering and dispersing individuals due to previous observations and known populations off-site in the general vicinity.

Grasshopper sparrow. This species is a state species of special concern. Grasshopper sparrow was observed immediately adjacent to the BSA within non-native grassland off-site (Attachment B). This species has a high potential to nest within the BSA due to the presence of expansive, dense non-native grassland on-site with connectivity to additional grassland habitat.

Cooper's hawk. This species is a CDFW watch list species. Cooper's hawk has a moderate potential to nest within the BSA due to the presence of mature landscaping trees along Summit Meadow Road and associated with the Sweetwater Summit Regional Park. No active or inactive nests were observed within the BSA at the time of the reconnaissance survey.

Loggerhead shrike. This species a state species of special concern for nesting habitat. The loggerhead shrike is known to occur on the Sweetwater Reservoir property in similar grassland and disturbed habitat. The chain-link and barbed wire fencing within and surrounding the BSA provides ample habitat for perching and prey impalement. There is a moderate potential for nesting within the dense landscaping bushes along the western boundary of the BSA.

Coronado skink. This species is a CDFW watch list species. The Coronado skink was identified in the BSA during the survey in 2009 (RECON 2009). There have been no major disturbance to the habitat in the BSA since then, and therefore, species presence is still expected.

Orange-throated whiptail. This species is a CDFW watch list species. There are known locales within one mile of the BSA in similar disturbed habitat conditions (P. Famolaro, pers. comm.) Although none were observed during the surveys, the species is considered to have a high likelihood of occurrence.

Migratory & Nesting Birds. The project also has potential to support migratory and nesting birds within the entire BSA. Migratory and nesting birds are protected under the California Fish and Game Code and federal Migratory Bird Treaty Act.

San Diego black-tailed jackrabbit. This species is a state species of special concern. While no individuals or sign (pellets) were observed during the surveys, there are known accounts of the species within one-half mile of the project site to the north and east of the BSA in similar grassland habitat (Amec Foster Wheeler 2017, P. Famolaro, pers. comm.). These species is considered to have a high likelihood of occurrence within the BSA.

Sensitive Bats. The BSA supports suitable foraging habitat for the following sensitive bat species, which are state species of special concern: western mastiff bat, pocketed free-tailed bat, Mexican long-tongued bat, big free-tailed bat, western red bat, and hoary bat. In additional, the mature landscaping trees at the edge of the BSA have marginal potential to support roosting western red and hoary bats.

Jurisdictional Wetlands and Waters

The biological reconnaissance survey included an evaluation of potential waters and wetlands under the jurisdiction of the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA); the San Diego Regional Water Quality Control Board (RWQCB) under CWA Section 401; and CDFW under California Fish and Game Code Section 1600. Based on past projects, Sweetwater Reservoir below the 239-foot elevation mark is considered jurisdictional waters of the U.S. by USACE and RWQCB and waters of the state by CDFW (**Figure 4**; Amec Foster Wheeler 2017). At the time of the reconnaissance survey, this area was comprised of non-native grassland within a lacustrine/reservoir setting, due to water levels being lower than the 239-foot elevation mark.



Wildlife Corridors

The BSA is located at the southern terminus of the Sweetwater Reservoir, which is fed by the Sweetwater River. The Sweetwater River and adjacent lands form an east-west connection between the coast and open space areas of southeastern San Diego County. The BSA is situated within a segment of this east west corridor, as well as an area that connects open space areas to the north and south on a local level, and is potentially a local water access route for species in the surrounding habitats.

6. Relationship to Regional Preserves

The project is located within SWA managed property and along roadsides in designated utility corridors. The Sweetwater Reservoir property is not part of any natural community conservation plans or habitat conservation plan, the San Diego County Multiple Species Conservation Program (MSCP) (County of San Diego 1997). A portion of the project occurring along San Miguel Road, in the southern portion of the BSA, is adjacent to the County of San Diego's MSCP Pre-approved Mitigation Area (Figure 5). However, all the work within San Miguel Road (installation of a water main) will occur within the already developed road and no impacts to biological resources protected by the MSCP would occur. Therefore, the project would not conflict with any adopted Natural Community Conservation Planning areas such as the County's MSCP.

7. Evaluation of Biological Resources

The biological value of a site is based on a number of factors including (but not limited to) habitat types present, quality of habitat, diversity of biological resources present, potential to support sensitive biological resources, habitat patch size, and connectivity to other high quality habitat. The BSA consists of non-native grassland, disturbed habitat, and urban/developed, and does not support any native or sensitive habitats. However, though the non-native grassland supports few native plant species and is low in species diversity, it provides nesting and foraging habitat for a number of avian species, including special-status species such as grasshopper sparrow. Additionally, the non-native grassland provides connectivity to more expansive areas of non-native grassland and provides vegetative cover for wildlife species that may be using the area as a wildlife corridor, such as mule deer (*Odocoileus hemionus*) and coyote (*Canis latrans*). Additionally, though the disturbed habitat is dominated by non-native plant species, it also provides potential habitat for foraging raptors, nesting birds, and special-status plants, including burrowing owl, San Diego viguiera (observed on-site) and Otay tarplant (recent occurrence on-site). Overall the habitats within and surrounding the BSA form part of a valuable wildlife corridor to adjacent open spaces and are considered to be of moderate biological value due to corridor functions and the presence of special-status species.

8. Project Impacts and Significance

This section presents direct and indirect impacts to biological resources that are expected to result from the project. Direct impacts include alteration, disturbance, or destruction of biological resources; indirect

impacts include impacts such as elevated noise and dust levels, soil compaction, decreased water quality, and/or introduction of invasive species.

Vegetation Communities and Habitats

The project would result in permanent impacts to a total of 0.76 acre, including 0.52 acre of non-native grassland, 0.07 acre of disturbed habitat, and 0.17 acre of urban/developed. Projected temporary impacts within the larger study area have been identified by the SWA as areas required for construction, vehicle traffic, access, and staging. Temporary impacts are defined as the crushing or removal of vegetation that would be restored in place to pre-project conditions at completion of the project. Temporary impacts encompass 1.27 acre and include 0.14 acre of non-native grassland, 0.41 acre of disturbed habitat, and 0.72 acre of urban/developed. Project impacts to vegetation communities within the BSA are shown on **Figure 6** and summarized in **Table 2** below. Permanent and temporary impacts to non-native grassland are considered significant and would require mitigation. Permanent and temporary impacts to disturbed habitat and urban/developed are considered less than significant and would not require mitigation.

TABLE 2
IMPACTS TO VEGETATION COMMUNITIES AND LAND COVER TYPES

| Vegetation Community/Land Cover Type | Existing Acreage within the BSA | Permanent Impacts (acres) | Temporary Impacts (acres) |
|---------------------------------------------|----------------------------------------|----------------------------------|----------------------------------|
| Sensitive Vegetation Communities | | | |
| Non-native grassland (42200) | 8.4 | 0.52 | 0.14 |
| Other Land Cover Types | | | |
| Disturbed Habitat (11300) | 7.8 | 0.07 | 0.41 |
| Urban/Developed (12000) | 6.5 | 0.17 | 0.72 |
| Total Acres | 22.7 | 0.76 | 1.27 |

Sensitive Species

Plants

The project would avoid impacts to San Diego viguiera occurring within the BSA (Figure 6). Additionally, Otay tarplant was not detected within the BSA in 2019, but was recorded in the BSA in 2017. This Otay tarplant locale was outside of the project impact areas (permanent and temporary) and several years of prior survey also did not detect Otay tarplant in the project impact areas. Therefore, the potential for species occurrence in these areas is considered moderate to high, and warrants additional investigation should project construction occur after May 2020 (Attachment D).

Although no small-flowered morning glory were detected in the BSA during the survey, the potential for occurrence in the project impact area is considered high. However, potential impacts as a result of the project are considered less than significant as project impacts are not expected to substantially reduce the viability of these species' populations. Additionally, impacts to habitat for this species within the BSA would be offset through habitat-based mitigation as described in mitigation measure BIO-1 below.



Wildlife

Wildlife. The project may result in direct impacts to small mammals and reptiles with low mobility. While it is anticipated that most mammals, reptiles, and birds will be able to move out of the way during grading, any project impacts to these species would be less than significant because adequate habitat for these species is conserved regionally by the MSCP and project impacts are not expected to substantially reduce the viability of these species' populations. Therefore, no mitigation is required.

Sensitive Bats. The project would avoid impacts to sensitive bat species with potential to roost within the BSA. The landscape trees occurring at the edge of the BSA provide marginal roosting habitat, which would be avoided by the project. Impacts to foraging habitat would be less than significant as project impacts are not expected to substantially reduce the viability of these species' populations. Additionally, impacts to foraging habitat within the BSA would be offset through habitat-based mitigation as described in mitigation measure BIO-1 below.

Migratory & Nesting Birds. Direct impacts to migratory and nesting birds could result from the accidental destruction of nests through removal of non-native grassland and disturbed habitat, if construction were to occur during the breeding season (e.g. February 1 – August 31). In addition, construction noise and dust could result in indirect disturbance to nests, potentially resulting in nest abandonment, if construction were to occur during the breeding season.

Jurisdictional Wetlands and Waters

The project impact area is located outside of the jurisdictional waters of the U.S./State associated with Sweetwater Reservoir located within the BSA. Thus, no permanent or temporary impacts would result to any jurisdictional waters or wetlands from the project.

Wildlife Corridors

The project would not substantially interfere with movement of wildlife or any established wildlife corridors. Though the BSA is situated within a wildlife corridor that is considered part of the Sweetwater River linkage area, permanent impacts resulting from the project would be limited to 0.81 acre and would not result in any barriers to wildlife movement in the vicinity. Temporary impact areas do not include native habitats. Temporary impacts would occur to non-native habitats and developed areas, and would be able to provide a similar function within the wildlife corridor once the project is completed. The project impacts would be considered an incremental (permanent impacts) and temporal (temporary impacts) loss, but would not be considered a significant impediment or impact to wildlife movement.

9. Compensatory Mitigation and Recommendations

Vegetation Communities and Habitats

To reduce permanent and temporary impacts to non-native grassland to a level of less than significant, the following avoidance and minimization measure shall be implemented:

BIO-1: Permanent impacts to 0.52 acre of non-native grassland shall be mitigated at a 1:1 ratio (**Table 3**). Mitigation for permanent impacts shall be accomplished through preservation at the SWA's existing Skelton Habitat Mitigation Area or similar site on SWA property. Mitigation for temporary impacts shall be accomplished through on-site revegetation to pre-project conditions or better following construction. Temporarily disturbed areas will be re-seeded with suitable native grassland species as coordinated by the SWA Biologist. Temporary impacts to disturbed habitat will be revegetated with a grassland plant palette, as appropriate and based on the post-project site conditions and adjacent habitat types. Follow-up monitoring and maintenance will be performed by SWA's Habitat Maintenance Staff to ensure that sufficient plant cover is established to preclude erosion and the establishment of detrimental invasive species not previously located within the area.

TABLE 3
IMPACTS AND MITIGATION FOR VEGETATION COMMUNITIES AND LAND COVER TYPES

| Vegetation Community/Land Cover Type | Acreage within the BSA | Permanent Impacts (acres) | Mitigation Ratio | Mitigation Acreage | Temporary Impacts (acres) | Revegetation Ratio | Revegetation Acreage |
|---------------------------------------------|-------------------------------|----------------------------------|-------------------------|---------------------------|----------------------------------|---------------------------|-----------------------------|
| Sensitive Vegetation Communities | | | | | | | |
| Non-native grassland (42200) | 8.6 | 0.52 | 1:1 | 0.52 | 0.14 | 1:1 | 0.14 |
| Other Land Cover Types | | | | | | | |
| Disturbed Habitat (11300) | 7.6 | 0.07 | - | 0.00 | 0.41 | 1:1 | 0.41 |
| Urban/Developed (12000) | 6.5 | 0.17 | - | 0.00 | 0.72 | - | 0.00 |
| Total Acres | 22.7 | 0.76 | - | 0.52 | 1.27 | - | 0.55 |

Sensitive Species

Plants

To reduce construction-related impacts to Otay tarplant to a level of less than significant, the following avoidance and minimization measure shall be implemented:

BIO-2: An inspection for Otay tarplant during the appropriate blooming period (i.e. May – June) is recommended to verify absence in the project impact areas only in the same year as construction. If present, the SWA shall contact the USFWS and CDFW to obtain permit approval as necessary. Potential unavoidable impacts should be mitigated in the form of permanent conservation and management of similar occupied or potential Otay tarplant habitat on the Reservoir property at a ratio to be agreed on with USFWS and/or CDFW. The conserved mitigation area may require restoration if Otay tarplant is lacking and could also potentially co-occur with mitigation for permanent habitat loss from the project (i.e. 0.52 acre of non-native grassland).

Wildlife

To reduce construction-related impacts to potential nesting and migratory birds to a level of less than significant, the following avoidance and minimization measures shall be implemented:

- BIO-3:** If construction initiation occurs between February 1 and August 31, a pre-construction nesting bird and raptor survey of the project impact area and an appropriate buffer of up to 500 feet shall be completed by a qualified biologist prior to vegetation removal. If any active nests are detected, the area will be flagged and mapped on construction plans along with a buffer as recommended by the qualified biologist. The buffer area(s) established by the qualified biologist will be avoided until the nesting cycle is complete or it is determined that the nest is no longer active. The qualified biologist shall be a person familiar with bird breeding behavior and capable of identifying the bird species of San Diego County by sight and sound and determining alterations of behavior as a result of human interaction including construction. Buffers, if needed, will be based on local topography and line of sight, species behavior and tolerance to disturbance, and existing disturbance levels.
- BIO-4:** Prior to initiation of project clearing, grading, grubbing, or other construction activities, a pre-construction survey for the presence of coastal California gnatcatcher to verify species absence shall be conducted. If present in the project construction footprint or immediate surrounding area (up to 300 feet), coordination with USFWS and CDFW shall occur to establish measures to reduce potential impacts to coastal California gnatcatcher. Such measures may include (but are not limited to): delay of construction until the species is no longer present (after the breeding season), implementation of noise reduction techniques, or monitoring to ensure the species is not harmed during project implementation.
- BIO-5:** Prior to initiation of project clearing, grading, grubbing, or other construction activities, pre-construction surveys for the presence of burrowing owl to verify species absence shall be conducted. The pre-construction surveys shall follow the take avoidance survey methods outlined in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). The first survey shall be conducted prior to 30 days of initial site disturbance, and the second survey shall occur within 24 hours of initial site disturbance. Subsequent pre-construction surveys will be required if lapses in the project occur exceeding 72 hours. If present in the project construction footprint or immediate surrounding area, coordination with CDFW shall occur to establish measures to avoid potential impacts to burrowing owl. Such measures may include (but are not limited to): construction avoidance until the species is no longer present (after the breeding season), installation of one-way burrow exclusion devices, construction of alternate burrow sites in the nearby vicinity prior construction, or monitoring to ensure the species is not harmed during project implementation.

10. References

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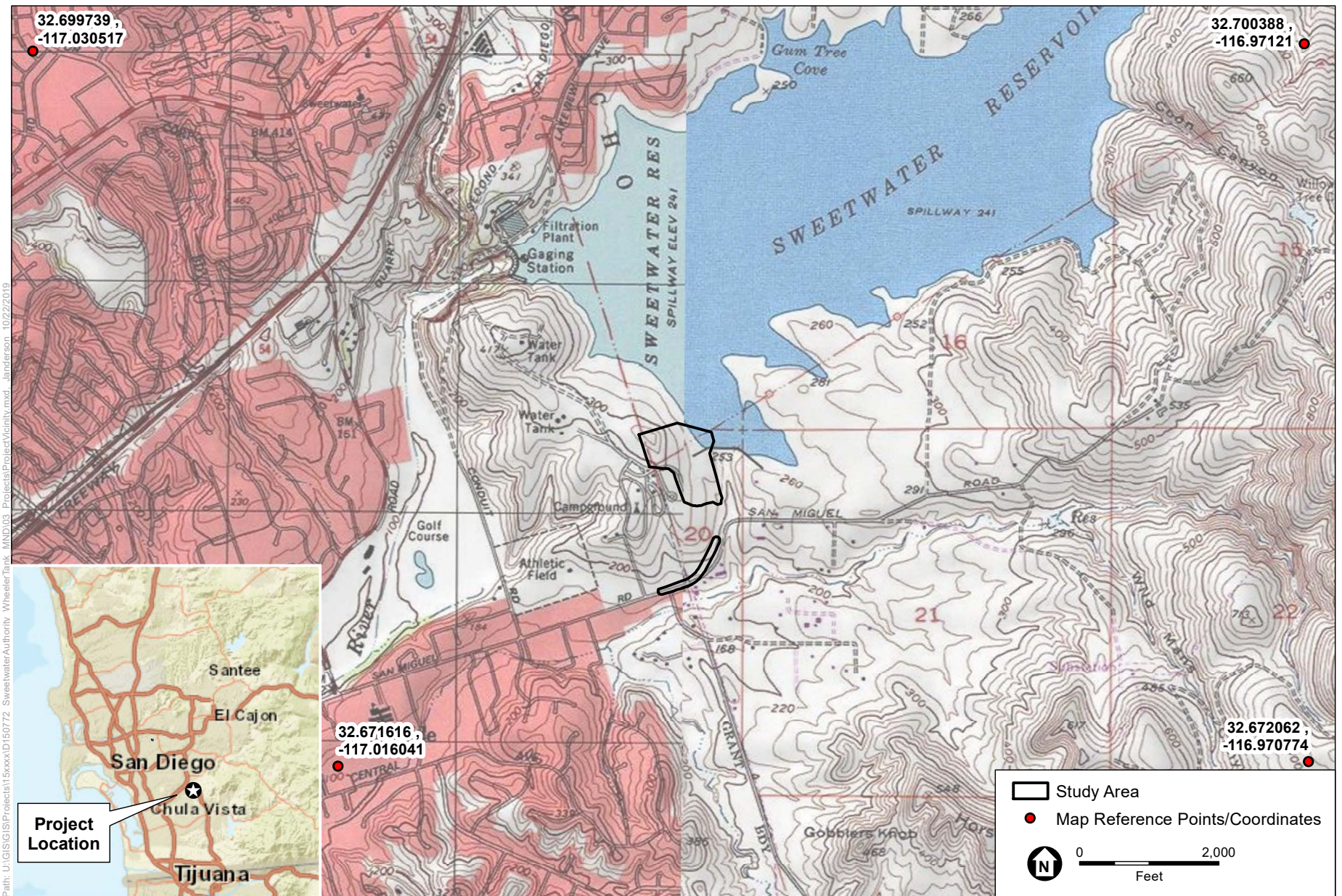
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Figures and Attachments

- A – Quino Checkerspot Butterfly Habitat Assessment Results
- B – Coastal California Gnatcatcher Survey Results
- C – Burrowing Owl Survey Results
- D – Otay Tarplant Survey Results
- E – Floral Compendium
- F – Faunal Compendium
- G – Special-Status Plant Species Potential to Occur
- H – Special-Status Wildlife Species Potential to Occur

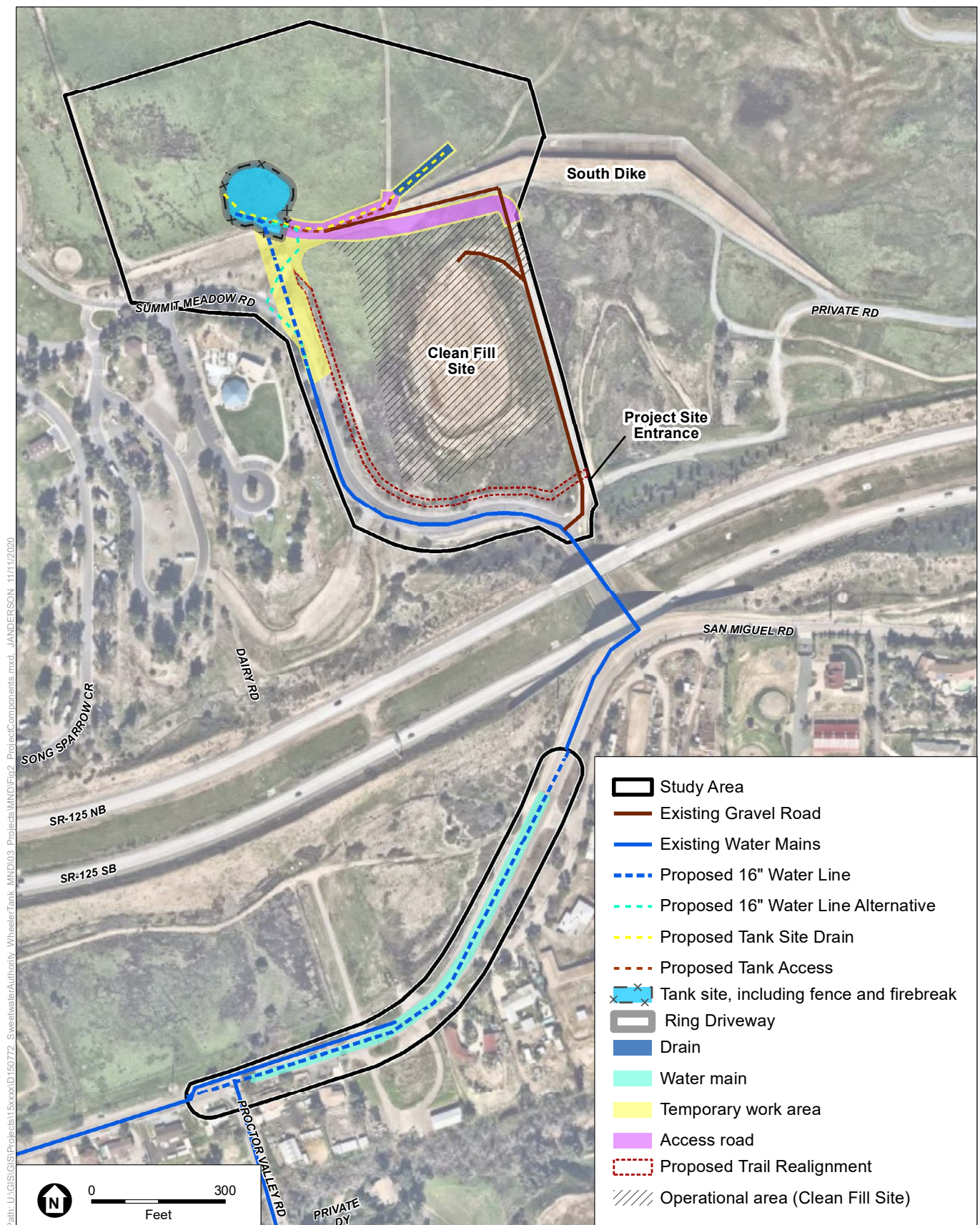
Figures



SOURCE: ESRI; SanGIS; USGS Topo 7.5' Quad National City 1975, 1978; Jamul Mountains 1975, 1978

Central Wheeler Tank and System Improvements Project

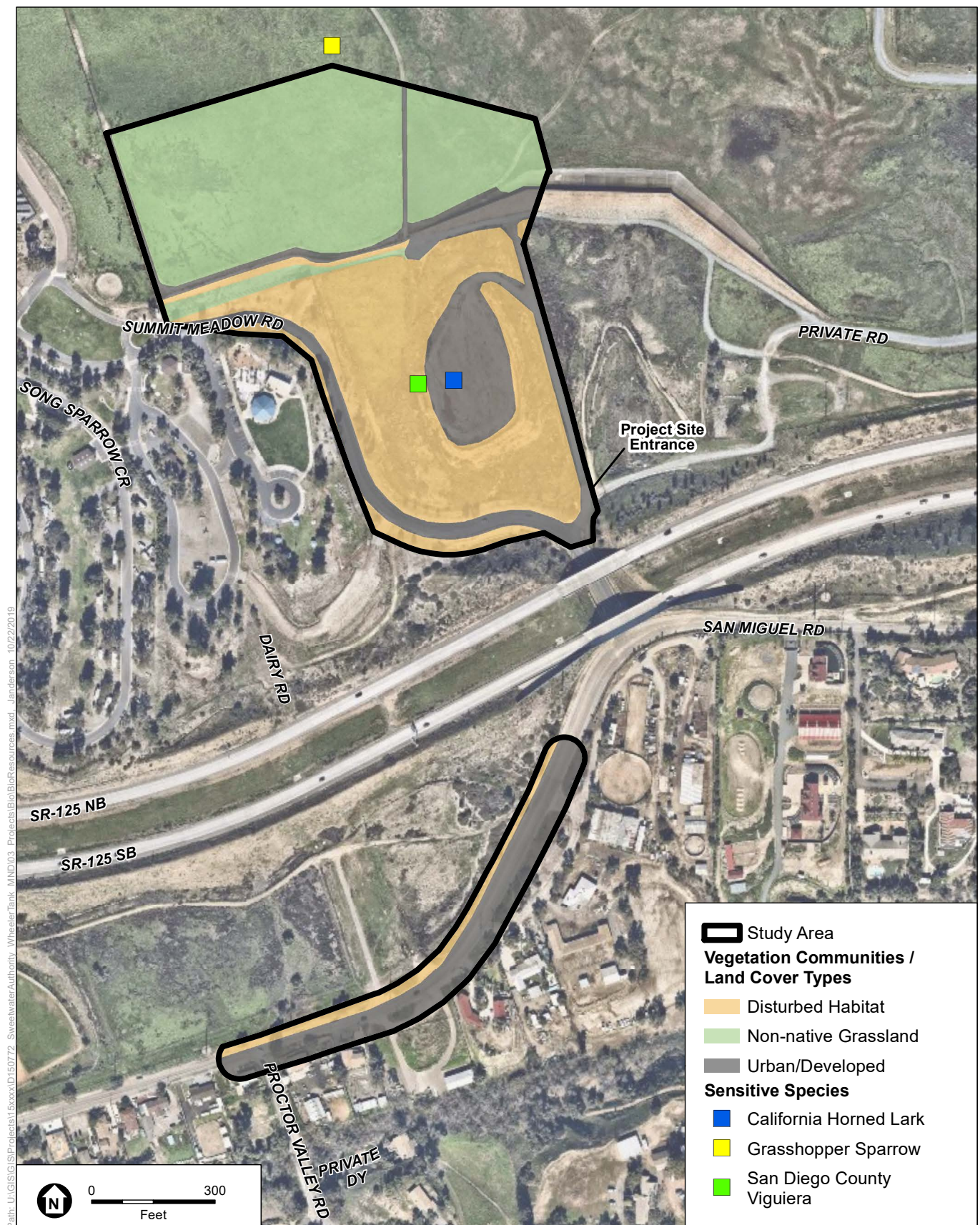
Figure 1
Project Vicinity



SOURCE: Digital Globe 2017; ESA 2018; Sweetwater Authority 2018

Central-Wheeler Tank and System Improvement

Figure 2
Project Components



SOURCE: Digital Globe 2017; ESA 2018; Sweetwater Authority 2018

Central Wheeler Tank and System Improvements Project

Figure 3
Biological Resources



SOURCE: Digital Globe 2017; ESA 2018; Sweetwater Authority 2018

Central Wheeler Tank and System Improvements Project

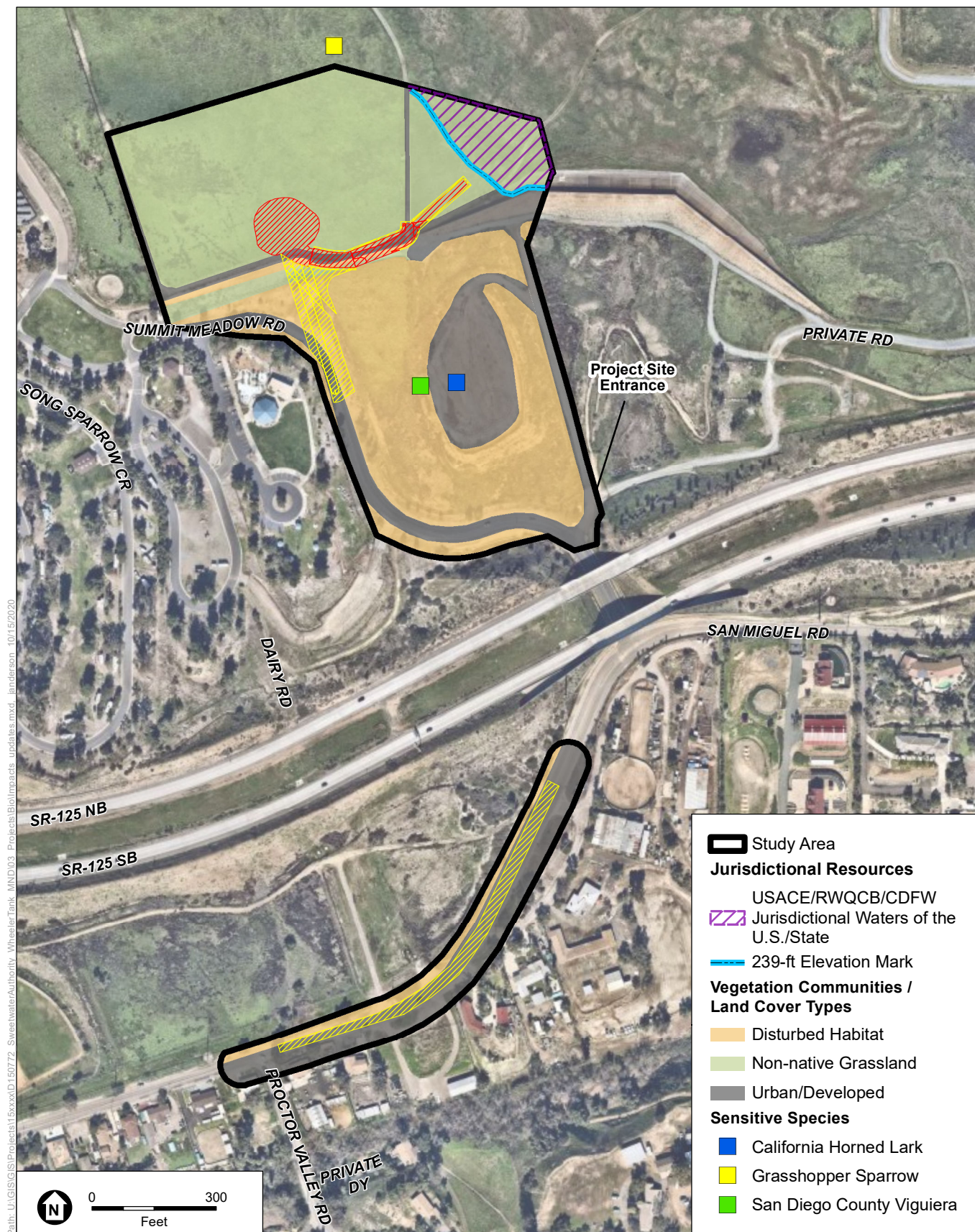
Figure 4
Jurisdictional Resources



SOURCE: Digital Globe 2017; ESA 2018; Sweetwater Authority 2018

Central Wheeler Tank and System Improvements Project

Figure 5
Project in Relation to County of San Diego MSCP



SOURCE: Digital Globe 2017; ESA 2018; Sweetwater Authority 2018

Central Wheeler Tank and System Improvements Project

Figure 6
Project Impacts

Attachment A

**Quino Checkerspot Butterfly
Habitat Assessment Results**



27 March 2019

Mr. Erick Del Bosque
Engineering Manager
Sweetwater Authority
505 Garrett Avenue
Chula Vista, CA 91910

RE: Results of the Quino Checkerspot Butterfly Habitat Assessment at the Proposed Central-Wheeler Tank Project Site, Sweetwater Reservoir

Dear Mr. Del Bosque,

The Sweetwater Authority (Authority) requested that Wood Environment & Infrastructure Solutions (Wood) conduct a habitat assessment for the federally listed endangered Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) at the Central-Wheeler Tank (CWT) project site. The site is located within the Sweetwater Reservoir watershed lands north of Summit Meadows Road, in the La Presa area of San Diego County.

The proposed CWT project consists of construction of a 0.8-million-gallon welded steel water tank, approximately 1,600 feet of transmission main water line, and installation of 185 pressure reducing valves to complete a pressure zone conversion project. The new water tank will be located adjacent to the south side of Sweetwater Reservoir, adjacent to Summit Park off San Miguel Road (see Figure 1). The transmission main will be installed in two segments, one from the proposed tank to an existing water main in Summit Meadows Road (Figure 1) and another in San Miguel Road (Figure 1). Lastly, the project includes a tank drain line that empties towards the Sweetwater Reservoir (Figure 1).

QCB Study Area

The study area for the QCB habitat assessment encompassed the entire CTW project footprint and associated features (Figure 1). This 22.6 acre area included sufficient buffer to ensure areas immediately adjacent to the project were also evaluated. It is located inside of the USFWS Recommended Quino Survey Area (USFWS 2014) within Sweetwater Authority property and is contiguous with more expansive areas of natural habitats to the north and east. The study area is located west of lands under the jurisdiction of San Diego County, and the San Diego National Wildlife Refuge boundary is located approximately 2,000 feet to the east.

Topographically, the study area is located at the southwestern end of a wide, relatively flat valley, in the south western portion of the Sweetwater Reservoir property. The study area consists of gently sloped areas with elevation ranging from 170 to 340 feet above mean sea level. Soils in the study area are in the Olivenhain and Diablo series (NRCS 2017). The majority of the study area supports soils in the Olivenhain series. Olivenhain Cobbly Loam is a complex, clayey series consisting of well drained loams with heavier clay intrusions and cobbles. The

southernmost and north-eastern portions of the study area support soils in the Diablo series. The Diablo series typically consists of well-drained, moderately deep to deep clays derived from soft, calcareous sandstone and shale.

Methods

On 12 February 2019, Wood biologist Erika Eidson (TE051236-3) conducted a QCB habitat assessment of the entire study area. The habitat assessment was conducted between the hours of 0920 and 1145. Weather ranged from 55 °F to 65 °F with hazy to clear skies and wind of 0-2 miles per hour. The habitat assessment consisted of walking meandering transects throughout the survey area while assessing the suitability of the habitat and searching for QCB host plants. The presence of potential QCB nectar sources were also evaluated.

The habitat assessment identified potentially suitable habitat as defined by the USFWS QCB Survey protocol (USFWS 2014) and also assessed the quality of this suitable habitat. Potentially suitable habitat was assessed based on the quality of the habitat, quality of the surrounding habitat, nectar sources, and presence of host plants.

In addition to the habitat assessment, reports provided by the Authority of previous QCB surveys/habitat assessments conducted in the project area and/or its immediate vicinity were evaluated.

Results

The survey area supports predominantly non-native grassland, disturbed habitat, and developed areas. Non-native grassland component species included wild oats (*Avena* spp.), brome grasses (*Bromus* spp.), and ryegrass (*Festuca* sp.). Areas of non-native grassland were very dense and did not support native or non-native forbs. Disturbed habitat was more open with component species including Russian thistle (*Salsola tragus*), crown daisy (*Glebionis coronaria*), red-stem filaree (*Erodium cicutarium*), and schismus (*Schismus* sp.). Developed areas consisted of a graded pad (i.e. former clean landfill site), unpaved reservoir access roads, earthen and concrete portions of the south dike, and asphalt pavement along Summit Meadow and San Miguel Roads.

No host plants were detected during the habitat assessment and potential nectar sources were lacking. Crown daisy was not in flower but may be a potential nectar source once it does flower. However, the use of this species by QCB is not known since crown daisy is not a dominant species, or even typically present, in areas occupied by QCB.

Past surveys conducted in the area were also evaluated as part of this habitat assessment. Protocol QCB surveys were conducted in and/or very close to the project study area in 2000, 2002, and 2017 (Table 1). QCB protocol surveys conducted in 2017 included the majority of the current survey area. In addition, protocol surveys were conducted in an area that includes the northern portion of the survey area in 2002, 2003, and 2004. QCB was not detected during any of these protocol surveys. Habitat assessments for QCB were also conducted in the study area in 2002 and 2009. All of these prior protocol surveys and QCB habitat assessments have agreed that the study area is dominated by dense non-native grassland and disturbed habitats. While not excludable per the USFWS QCB protocol (USFWS 2014), these habitats are of low to very

low quality and not considered suitable for QCB. No host plants or suitable nectar sources have been detected during prior surveys or habitat assessments, with the exception of the 2017 protocol surveys. The 2017 observations found host plant south of the Sweetwater Dam, approximately 0.6 mile north of the survey area. These host plants were growing in high quality coastal sage scrub which does not occur in the CWT study area. The 2017 studies also concluded that QCB was not expected to occur in the survey area (Amec Foster Wheeler 2017).

Table 1. Summary of Historic QCB Protocol Surveys and Habitat Assessments Conducted in the Survey Area

| Survey Type | Year Conducted¹ | Company | Results | Location |
|------------------------|-----------------------------------|---------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Protocol QCB | 2000 | Marquez & Associates Biological Consultants | No QCB, no host plants, no suitable nectar sources | Included current survey area |
| Protocol QCB | 2002 | McMillan Biological Consulting | No QCB, no host plants, no suitable nectar sources | Included northern portion of current survey area |
| Protocol QCB | 2003 | McMillan Biological Consulting | No QCB, no host plants, no suitable nectar sources | Included northern portion of current survey area |
| Protocol QCB | 2004 | McMillan Biological Consulting | No QCB, no host plants, no suitable nectar sources | Included northern portion of current survey area |
| QCB Habitat Assessment | 2009 | Recon | No QCB, no host plants, no suitable nectar sources | Included northern portion of current survey area |
| Protocol QCB | 2017 | Wood (formerly Amec Foster Wheeler) | No QCB. Host Plants detected south of dam | Included current survey area. Host plants and suitable nectar sources outside of current project area |
| QCB Habitat Assessment | 2019 | Wood | No host plants, no suitable nectar sources | Current survey area |

¹ in References

Historical occurrences reported by the California Natural Diversity Database (CNDDB; CDFW 2019) include Mother Miguel and Dictionary Hill. The most recent occurrence of QCB in the vicinity of the survey area were detected in 2003 (CDFW 2019) on Mother Miguel (San Diego National Wildlife Refuge), approximately 2.5 miles to the east. Habitat in the areas where QCB were once detected consisted of high quality coastal sage scrub. The USFWS is also actively translocating QCB along the lower slopes of Mother Miguel, San Miguel Mountain, above the Sweetwater River in an effort to recover and expand former QCB occurrence (P. Famolaro, pers.

comm.). None-the-less, habitat quality and lack of host plant and nectar sources greatly diminishes potential for future QCB occurrence in the CWT study area.

Discussion

Based on the negative results of five years of QCB protocol surveys in the survey area and/or its immediate vicinity and two QCB habitat assessments, the survey area is considered to be low quality habitat with very low potential to support QCB. Although non-native grassland and disturbed habitat in the survey area are not excludable per the USFWS protocol, these habitats have been surveyed and assessed multiple times since 2000 and have consistently been found to be absent of the species and classified as low quality QCB habitat.

Based on the 2019 habitat assessment, conditions in the survey area remain unchanged at this time. The results of surveys conducted in 2017 are representative of the current conditions and continue to be valid. Furthermore, these results are in agreement with the previously documented surveys. Given all of the QCB studies that have been conducted in this area over the last two decades, and the constant low-quality condition of the area, it is my professional opinion that conducting additional protocol QCB surveys would be excessive and unnecessary.

Respectfully,



Erika Eidson
Senior Biologist

cc: Pete Famolaro, Sweetwater Authority
Israel Marquez, Sweetwater Authority

References

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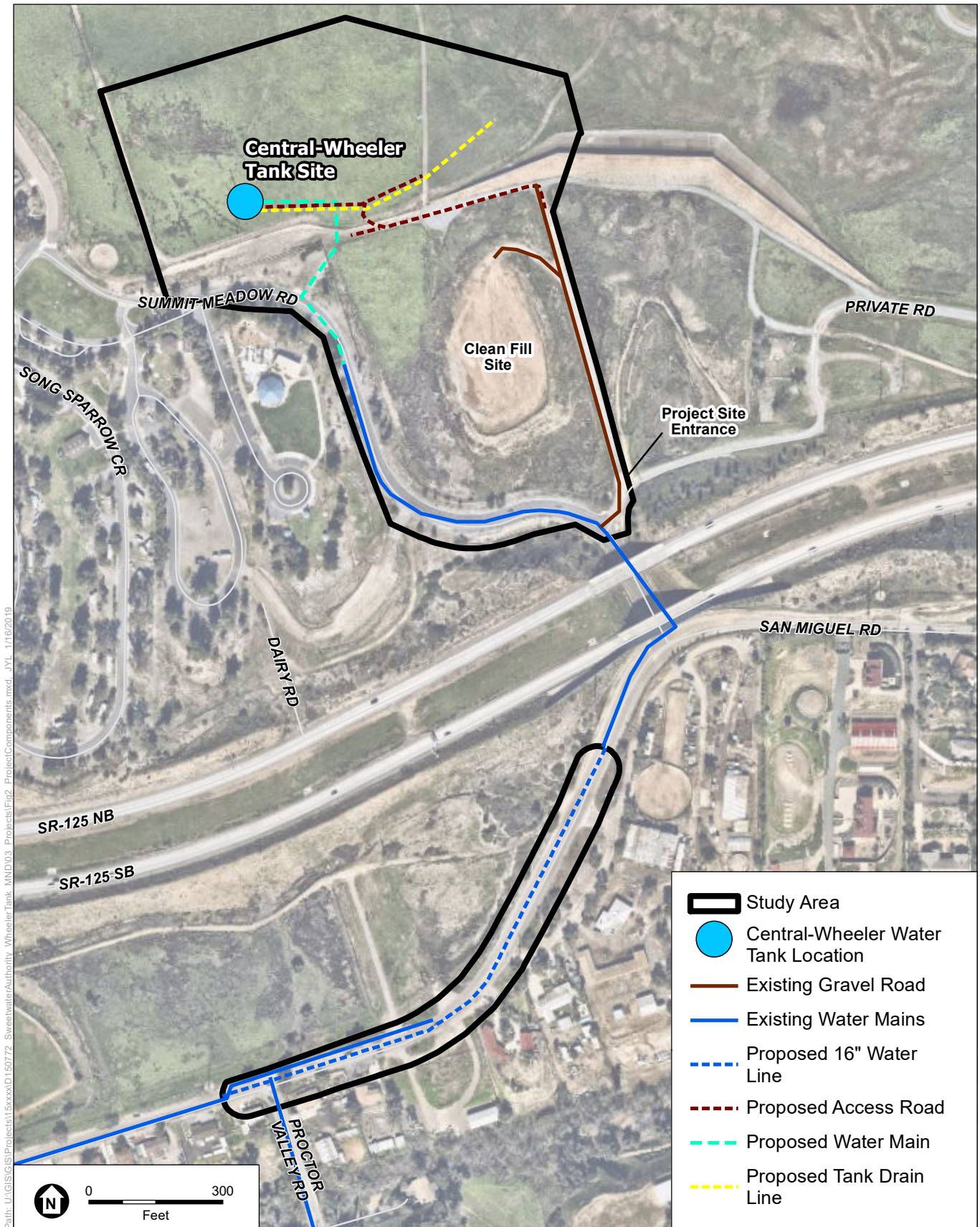
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Attachments:

Attachment A. ESA Project Figure

Attachment B. Representative Photos

ATTACHMENT A.



SOURCE: Digital Globe 2017; ESA 2018; Sweetwater Authority 2018

Central Wheeler Water Tank and Pipeline Project

Figure 1
Central Wheeler Water Tank and Pipeline Project Components

ATTACHMENT B. REPRESENTATIVE PHOTOS



Photograph 1

Subject: Survey area, looking southeast

Photographer: Erika Eidson
February 12, 2019



Photograph 2

Subject: Northern portion of survey area,
looking east

Photographer: Erika Eidson
February 12, 2019



Photograph 3

Subject: Southern portion of survey Area,
looking southeast

Photographer: Erika Eidson
February 12, 2019



Photograph 4

Subject: Dense non-native grassland

Photographer: Erika Eidson
February 12, 2019



Photograph 5

Subject: Disturbed habitat, looking southwest

Photographer: Erika Eidson
February 12, 2019



Photograph 6

Subject: Graded pad, looking north

Photographer: Erika Eidson
February 12, 2019



Photograph 7

Subject: Survey area along Proctor Valley Road, looking southwest

Photographer: Erika Eidson
February 12, 2019



Photograph 8

Subject: Survey area along Proctor Valley Road, looking southwest

Photographer: Erika Eidson
February 12, 2019

Attachment B
**Coastal California Gnatcatcher
Survey Results**



SWEETWATER AUTHORITY

505 GARRETT AVENUE
POST OFFICE BOX 2328
CHULA VISTA, CALIFORNIA 91912-2328
(619) 420-1413
FAX (619) 425-7469
<http://www.sweetwater.org>

GOVERNING BOARD
STEVE CASTANEDA, CHAIR
JOSE PRECIADO, VICE CHAIR
JOSIE CALDERON-SCOTT
JERRY CANO
JOSÉ F. CERDA
HECTOR MARTINEZ
ALEJANDRA SOTELO-SOLIS

TISH BERGE
GENERAL MANAGER

JENNIFER H. SABINE
ASSISTANT GENERAL MANAGER

September 5, 2019

Ms. Stacey Love
Recovery Permits Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: Results of 2019 Coastal California Gnatcatcher Survey
Central Wheeler Tank Project (TE-813431-7)

Dear Ms. Love:

This letter serves as a post-survey report for the coastal California gnatcatcher (California gnatcatcher) (*Polioptila californica californica*) performed for the Central Wheeler Tank Project. The California gnatcatcher is listed as federally threatened by the U.S. Fish and Wildlife Service (USFWS) and a California Department of Fish and Wildlife (CDFW) State Species of Special Concern. The project study area is 22.6 acres in size and abuts the southeast limits of the Sweetwater Reservoir (Reservoir), San Diego County, California (Figure 1). The project, as proposed, would construct and operate a 0.8 million gallon above-ground water tank to improve the reliability of water service to Sweetwater Authority customers. Additionally, the project includes an access road to the tank, tank drain line to the Reservoir, and the addition and replacement water transmission main to deliver water from the new tank. Direct project impacts are anticipated to 2.47 acres (0.82 acre permanent and 1.65 acres temporary) within this study area boundary. The purpose of the survey was to determine the presence, including distribution and abundance, of coastal California gnatcatcher within the project study area in order to assess any potential affects to this species from the project in accordance with the California Environmental Quality Act (CEQA).

Study Area Description

The study area includes undeveloped and disturbed areas within the southeast corner of the Reservoir property as well as developed road areas along Summit Meadow Road and San Miguel Road. Within the Reservoir property, the South Dike clean landfill and portions of the South Dike are included in the study area. Terrain is flat to moderately steep with elevations ranging from approximately 180 to 350 above mean sea level. The study area is bordered by the Sweetwater Summit Regional Park (County Park) to the west and north, the Reservoir to the north and northeast, and undeveloped land to the east on the Reservoir property and the adjoining San Diego National Wildlife Refuge (Refuge).

Excluding developed or existing operational areas, vegetation within the study area is characterized as non-native grassland and ruderal/disturbed. Non-native grassland comprises the northern portion of the study area, while ruderal/disturbed vegetation largely occupies the

*A Public Water Agency
Serving National City, Chula Vista and Surrounding Areas*

southern portion. The non-native grassland is heavily thatched over and consists primarily of wild oat (*Avena* sp.), rye grass (*Lolium* sp.), and ripgut grass (*Bromus diandrus*) with patchy and sporadic prickly lettuce (*Lactuca serriola*) and Russian thistle (*Salsola tragus*) emerging from the heavy grass thatch. Ruderal/disturbed areas include very dense crown daisy (*Glebionis coronaria*) mixed with areas of wild oat, rye grass, ripgut grass, prickly lettuce, Russian thistle, as well as less frequent fountain grass (*Pennisetum setaceum*), black mustard (*Brassica nigra*), Canadian horseweed (*Conyza canadensis*), and sweet fennel (*Foeniculum vulgare*). A few mulefat (*Baccharis salicifolia*) and patch of rabbitfoot grass (*Polypogon monspeliensis*) occur in more mesic ruderal areas of the site. Only one California buckwheat shrub (*Eriogonum fasciculatum*) and a small developing patch of broom baccharis (*Baccharis sarothroides*), approximately 30 individuals, was identified in the study area. Overall habitat quality within the project study area, more specifically for the California gnatcatcher, is considered to be low to very low, especially for nesting potential, due to the lack of coastal sage scrub habitat.

Methods

The 22.6 acre study area was surveyed in accordance with the USFWS Presence/Absence Survey Protocol (1997). All surveys were performed by me as the Sweetwater Authority Biologist. Surveys were performed under fair weather, avoiding severe heat, cold, wind, and any rainy conditions (Table 1). One survey on May 10 was suspended due to inclement weather, and therefore, was incomplete in coverage for that day. Temperature and wind conditions were measured using a *Kestrel® 2000* portable meter. Temperature was measured in the shade and wind speed was taken as the maximum over a 30 second period.

Table 1: Survey Details

| Date (2019) | Time Start | Time End | Hours | Area (acres) | Acres / hour | Weather Conditions ¹ (Start) | Weather Conditions ¹ (End) |
|-------------|------------|----------|-------|--------------|--------------|-----------------------------------------|---------------------------------------|
| 3/22 | 8:30a | 11:00a | 2.50 | 22.6 | 9.0 | <5% CC, 56.8°F, wind 1.9 mph | 20% CC, 69.8°F, wind 2.8 mph |
| 3/29 | 9:00a | 10:55a | 1.92 | 22.6 | 11.8 | 10% CC, 66.7°F, wind 1.2 mph | 0% CC, 70.1°F, wind 1.0 mph |
| 4/5 | 9:00a | 10:45a | 1.75 | 22.6 | 12.9 | 90% CC, 67.3°F, wind 2.3 mph | 100% CC, 67.5°F, wind not recorded |
| 4/12 | 7:25a | 10:35a | 2.17 | 22.6 | 10.4 | 80% CC, 62.6°F, wind 0.0 mph | 70% CC, 65.0°F, wind 2.1 mph |
| 4/19 | 8:25a | 10:20a | 1.92 | 22.6 | 11.8 | 95% CC, 65.3°F, wind 2.3 mph | 40% CC, 80.3°F, wind 1.9 mph |
| 4/26 | 7:30a | 9:30a | 2.00 | 22.6 | 11.3 | 100% CC, 62.6°F, wind 2.3 mph | 50% CC, 72.1°F, wind 1.6 mph |
| 5/3 | 8:45a | 10:55a | 2.17 | 22.6 | 10.4 | 100% CC, 63.6°F, wind 2.5 mph | 70% CC, 67.6°F, wind 1.8 mph |
| 5/10 | 8:45a | 9:45a | 1.00 | 22.6 | NA | 100% CC, 66.7°F, wind 6.7 mph | Sustained drizzle, survey suspended |
| 5/17 | 8:30a | 11:00a | 2.50 | 22.6 | 9.0 | 95% CC, 64.7°F, wind 1.5 mph | 50% CC, 74.0°F, wind 5.4 mph |
| 5/31 | 8:05a | 10:10a | 2.08 | 22.6 | 10.9 | 100% CC, 67.0°F, wind 0.0 mph | 100% CC, 69.0°F, wind 1.6 mph |

¹ CC = Cloud Cover, °F = degrees Fahrenheit, mph = miles per hour

Surveys were performed by slowly traversing the hillsides, available access roads, and trails with careful attention to coastal California gnatcatcher vocalizations and direct observations of the species. Survey coverage averaged less than 13 acres per survey hour (Table 1). Taped vocalizations were used (i.e. played for approximately 15 seconds, at 1 minute intervals) where habitat conditions warranted to solicit California gnatcatcher response. All survey activities adhered to the Special Terms and Conditions of my Recovery Permit (TE-813431-7).

Survey Results

Despite careful searches for surveys described above, no California gnatcatchers were detected within the project study area. For non-participating Natural Communities Conservation Program (NCCP) jurisdictions, such as Sweetwater Authority, the Protocol requires a minimum of six (6) surveys for the period between March 15 and June 30 (USFWS 1997). The suite of nine (9) complete surveys shown above exceeds this, thus increasing confidence in species absence during this period. Surveys coincided with the peak California gnatcatcher breeding or nesting season.

Conclusions

While California gnatcatcher was not detected from these surveys during the nesting season, the species has been detected in the project study area at other times of the year. Non-breeding season observations have been recorded in January 2007 and October 2018 (Figure 2) (P. Famolaro, pers. obs.). These records in combination with the high density California gnatcatcher known on the Reservoir, Refuge, and County Park properties (P. Famolaro existing data), lack of species presence during the nesting season as determined by the current protocol surveys, and low to very low habitat quality for the species would conclude the site may only be used for post-breeding dispersal and/or winter refugia.

Because the species has been detected in the non-breeding season, prudent measures to avoid and or minimize impacts from the project are as follows:

- Perform pre-construction focused surveys by a qualified biologist. If found present in the project construction footprint or immediate surrounding area, coordinate results and mitigation measures, if necessary, with USFWS and CDFW. Measures could include but not limited to construction avoidance until species are no longer present (breeding only), implementation of noise reduction techniques (breeding only), and/or monitoring to ensure species are not harmed during project implementation.

Other Pertinent Wildlife Observations

Grasshopper sparrow (*Ammodramus savannarum*), a State Species of Special Concern, was detected in dense non-native grassland habitat immediately adjacent to the project study area (Figure 2). The species was detected several times over the course of the surveys in a relatively localized area and is likely to be breeding on-site. California horned lark (*Eremophila alpestris actia*), a CDFW Watch List species, was also detected (Figure 2), but observations (i.e. irregular frequency, short duration, and without territorial behavior) were not suggestive of current breeding by the species.

Results of 2019 Coastal California Gnatcatcher Survey
Central Wheeler Tank Project
September 5, 2019

Certification

I certify that the information in this survey report and attached figures fully and accurately represent my work.

Please feel free to contact me with any questions or comments regarding these surveys or report.

Sincerely,



Pete Famolaro
Biologist
Recovery Permit (TE-813431-7)

cc: Eric Porter, US Fish and Wildlife Service

References

U.S. Fish and Wildlife Service. 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. Prepared by the Carlsbad Field Office.
Revised July 28.

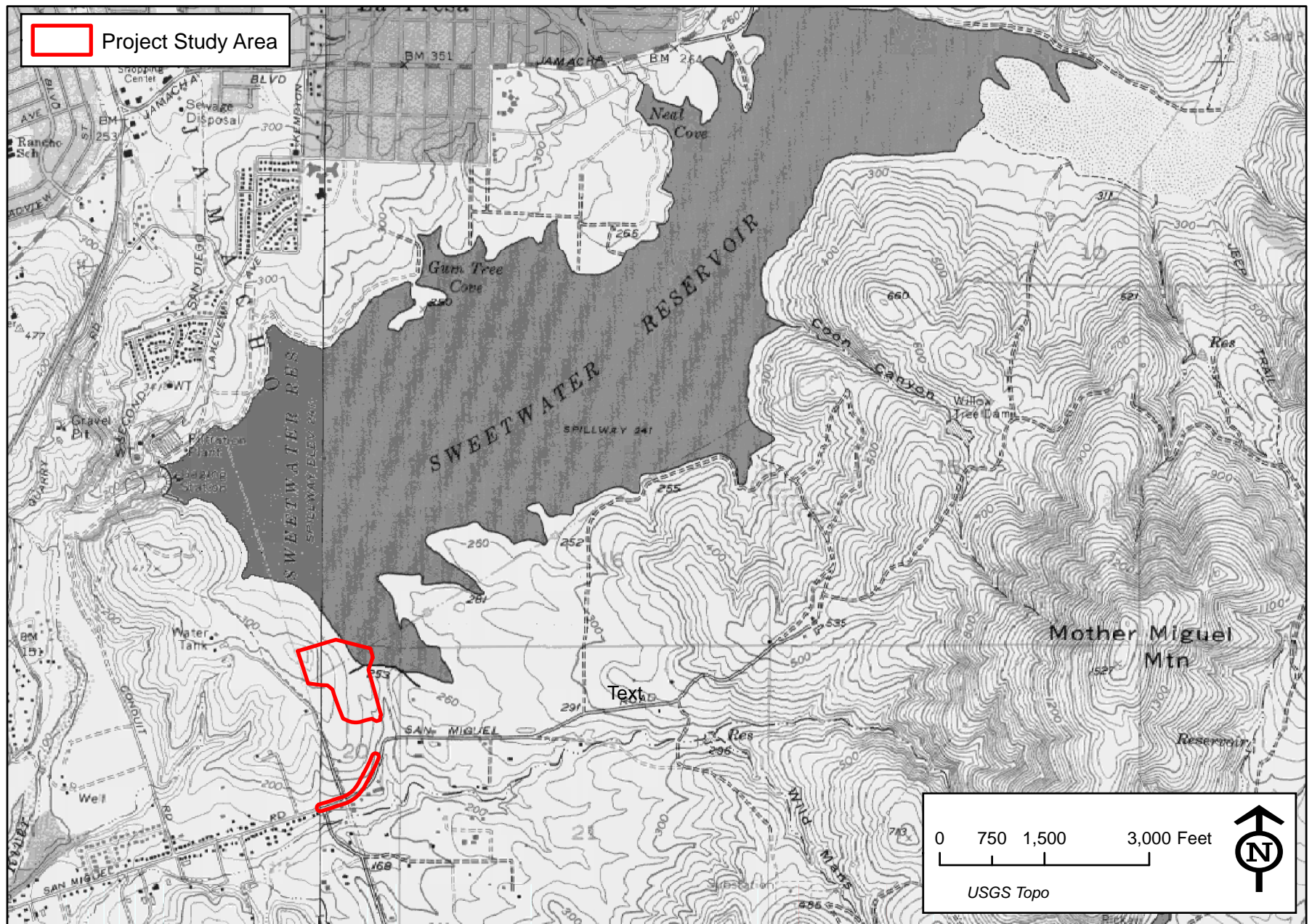


Figure 1. Coastal California Gnatcatcher Surveys
Central Wheeler Tank Project



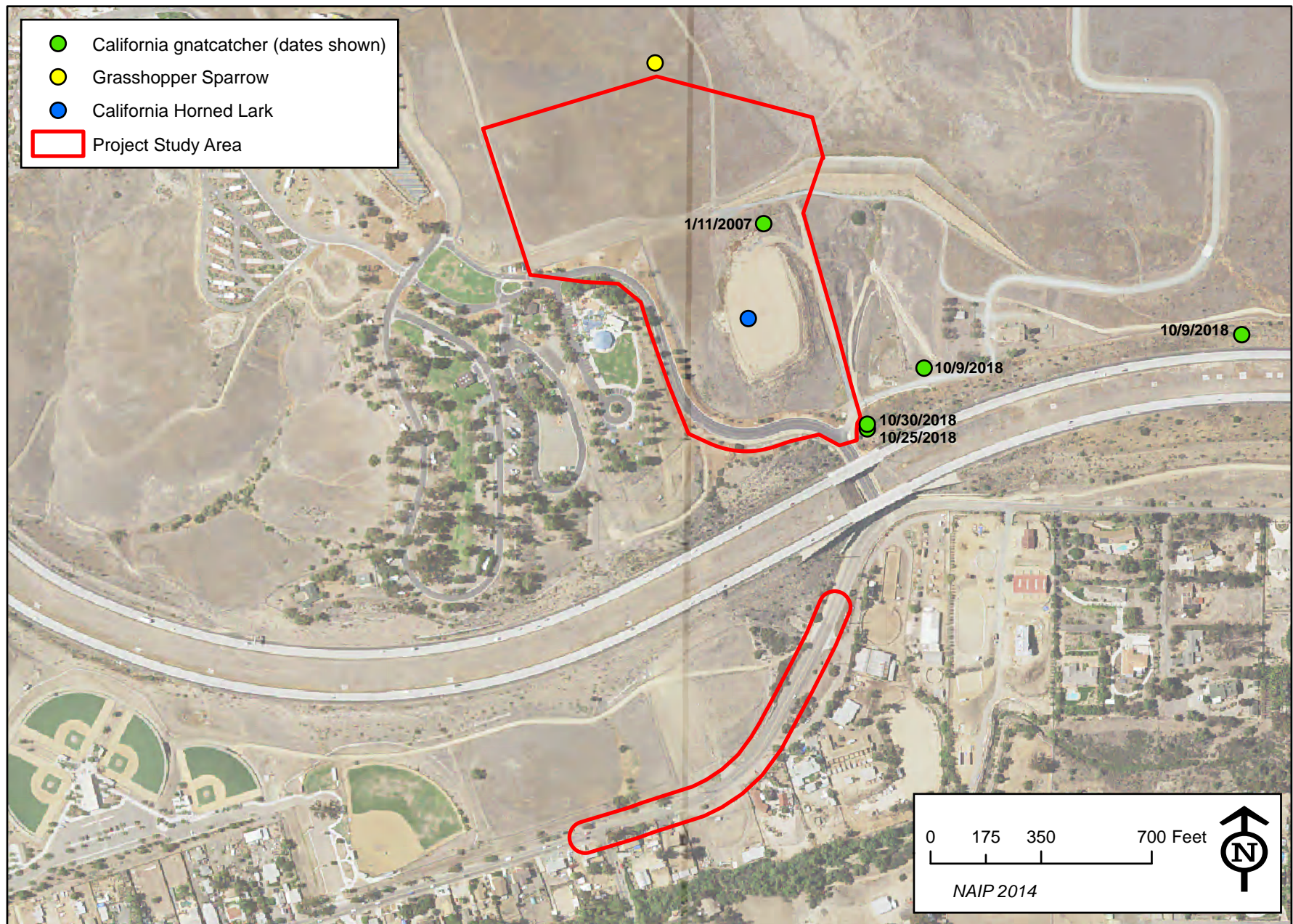


Figure 2. Coastal California Gnatcatcher and Other Sensitive Species Locations
Central Wheeler Tank Project



Attachment C

Burrowing Owl Survey Results



Memorandum

TO: Erick Del Bosque, Engineering Manager
Israel Marquez, Environmental Project Manager

FROM: Pete Famolaro, Biologist

DATE: September 16, 2019

SUBJECT: Burrowing Owl Surveys for the Central Wheeler Tank Project

This memo describes recent burrowing owl (*Athene cunicularia*) surveys for the Central Wheeler Tank Project (Project) being planned at Sweetwater Reservoir, San Diego County, California. The Project, as proposed, would construct and operate a 0.8 million gallon above-ground water tank, access road to the tank, tank drain line to Reservoir, and the addition and replacement of water transmission main to deliver water from the new tank. Additionally, an existing County Trail would be temporarily re-routed during the construction. Direct impacts from the Project are anticipated to 2.47 acres (0.82 acre permanent and 1.65 acres temporary) within the 22.6 Project study area.

Burrowing owl is a State Species of Special Concern (California Department of Fish and Wildlife (CDFW) 2018) and U.S. Fish and Wildlife Service (USFWS) Bird of Conservation Concern (USFWS 2008). The burrowing owl is known to occur at the Sweetwater Reservoir property, including documented occurrence immediately adjacent to the Project study area (P. Famolaro, pers. obs.) (Figure 1). Focus surveys were performed to determine the extent of burrowing owl occurrence, more specifically during the breeding season, and assess impacts to the species from the Project.

Site Description

The 22.6 acre Project study area includes undeveloped and disturbed areas within the southeast corner of the Reservoir property as well as developed road areas along Summit Meadow Road and San Miguel Road. Within the Reservoir property, the South Dike clean landfill and portions of the South Dike are included in the study area. Terrain is flat to moderately steep with elevations ranging from approximately 180 to 350 above mean sea level. The study area is bordered by the Sweetwater Summit Regional Park (County Park) to the west and north, the Reservoir to the north and northeast, and undeveloped land to the east on the Reservoir property and the adjoining San Diego National Wildlife Refuge (Refuge).

Habitat Conditions

The study area is largely characterized as non-native grassland and ruderal/disturbed. Non-native grassland comprises the northern portion of the study area, while ruderal/disturbed vegetation largely occupies the southern portion. The non-native grassland is heavily thatched over and consists primarily of wild oat (*Avena* sp.), rye grass (*Lolium* sp.), and ripgut grass (*Bromus*

diandrus) with patchy and sporadic prickly lettuce (*Lactuca serriola*) and Russian thistle (*Salsola tragus*) emerging from the heavy grass thatch. Ruderal/disturbed areas include very dense crown daisy (*Glebionis coronaria*) mixed with areas of wild oat, rye grass, ripgut grass, prickly lettuce, Russian thistle, as well as less frequent fountain grass (*Pennisetum setaceum*), black mustard (*Brassica nigra*), Canadian horseweed (*Conyza canadensis*), and sweet fennel (*Foeniculum vulgare*). Developed or other disturbed land covers within the study area include the clean landfill, South Dike, and existing dirt road and fuel break areas that are maintained and provide open ground/non-vegetated habitat. The site is occupied by California ground squirrel (*Otospermophilus beecheyi*) and their observed burrows (Figure 1) provide potential burrowing owl refugia or breeding habitat.

Species Background in the Vicinity of the Project

A single burrowing owl was most recently detected between November 12, 2018 and February 28, 2019 in the grassland swale below the South Dike and associated with a network of ground squirrel burrows (Figure 1) (P. Famolaro, existing data). Prior occurrence at this location was recorded on (or between): February 15, 2002, February 22, 2007; February 3 to March 8, 2008, March 7, 2012, December 10, 2012 (P. Famolaro, existing data). All of these prior burrowing owl accounts immediately adjacent to the Project study area were of a single individual with no breeding ever being recorded at this site. Burrowing owl breeding and/or overwintering occurrence has also been recorded somewhat regularly since 2006 approximately one-half mile to the east of the Project study area on both the Sweetwater Reservoir property and adjacent Refuge (P. Famolaro, existing data). These accounts were a direct result of vernal pool and grassland restoration efforts initiated in 2004 that also included the installation of artificial burrows.

Survey Methods

Four focused burrowing owl surveys were performed in accordance with the CDFW recommended protocol (CDFW 2012). The one protocol modification is transects of the study area were conducted only on the first survey. The subsequent three surveys used a combination of area search, fully inspecting the project study area by traversing roads and trails in and around the study area, and binocular inspection from higher vantage points. Identified ground squirrel burrows were also specifically inspected for all surveys to detect any active presence of burrowing owl and/or sign of use (i.e. owl pellets, owl feathers, prey remains, or white/fecal wash). Burrow inspections included the known ground squirrel burrows immediately east of the study area where burrowing owl had been previously observed.

All surveys were performed by me as the Sweetwater Authority Biologist. Surveys were performed under fair weather, avoiding severe heat, cold, wind, and any rainy conditions (Table 1). Temperature and wind conditions were measured using a *Kestrel® 2000* portable meter. Temperature was measured in the shade and wind speed was taken as the maximum over a 30 second period.

Table 1: Survey Details

| Date (2019) | Time Start | Time End | Hours | Area (acres) ¹ | Acres / hour | Weather Conditions ² (Start) | Weather Conditions ² (End) |
|-------------|------------|----------|-------|---------------------------|--------------|-----------------------------------------|---------------------------------------|
| 3/26 | 9:15a | 11:45a | 2.50 | 22.6 | 9.0 | 100% CC, 66.5°F, wind 1.1 mph | 100% CC, 75.3°F, wind 1.7 mph |
| 4/22 | 10:10a | 12:10p | 2.00 | 22.6 | 11.4 | 0% CC, 69.9°F, wind 2.8 mph | <5% CC, 79.0°F, wind 3.4 mph |
| 5/24 | 9:45a | 10:35a | 1.83 | 22.6 | 12.3 | 0% CC, 69.0°F, wind 3.3 mph | <1% CC, 74.0°F, wind 7.8 mph |
| 6/28 | 10:30a | 12:10p | 1.67 | 22.6 | 13.5 | <5% CC, 78.0°F, wind 7.7 mph | 5% CC, 78.0°F, wind 6.0 mph |

¹ Includes inspection of immediately adjacent ground squirrel burrows

² CC = Cloud Cover, °F = degrees Fahrenheit, mph = miles per hour

Results

No burrowing owl was identified in the Project study area as a result of the surveys and none of the identified ground squirrel burrows within the study area showed burrowing owl sign. Additionally, no burrowing owl or active burrow owl sign was detected in the immediately adjacent area below the South Dike where the species has been previously recorded.

Conclusions and Recommendations

While no breeding burrowing owl were detected in or immediately adjacent to the Project study area as a result of the focused surveys, available information suggests the area is at least used as a regular wintering site by the species. This is due to the presence of suitable ground squirrel burrows and relatively close proximity of known breeding burrowing owls that have occurred on Sweetwater Reservoir property and adjacent Refuge. Based on current survey data, the Project will not directly impact any known burrowing owls burrows. There is a network of ground squirrel burrows immediately adjacent to the proposed trail alignment; however, these burrows will not be removed by the Project. The project will also result in the incremental loss of burrowing owl foraging habitat.

Because the species has been detected in the non-breeding season, prudent measures to avoid and/or minimize impacts from the project are as follows:

- Perform pre-construction focused surveys by a qualified biologist. If found present in the project construction footprint or immediate surrounding area, coordinate results and mitigation measures, if necessary, with wildlife regulatory agencies as appropriate. Measures could include but not limited to construction avoidance until species are no longer present (breeding only), installation of one-way burrow exclusion devices, construction of alternate burrow sites in the vicinity in advance of construction, and/or monitoring to ensure species are not harmed during project implementation.

Memo to: Erick Del Bosque
Date: September 12, 2019
Subject: Burrowing Owl Survey for the Central Wheeler Tank Project
Page 4

- Loss of potential burrowing owl foraging habitat should be offset by permanent conservation of similar (or higher biological value habitat) on the Reservoir property. This applies to permanent impacts only (0.82 acre). Temporary impact areas should be revegetated immediately following construction.

References

California Department of Fish and Wildlife. 2017. Staff Report on Burrowing Owl Mitigation. State of California, Natural Resources Agency, Department of Fish and Game. March 7.

U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85 pp. [Online version available at <http://www.fws.gov/migratorybirds/>.]

I certify that the information in this survey report fully and accurately represents my work.



Sweetwater Authority
Biologist

Water Quality Department
Robert A. Perdue Water Treatment Plant
100 Lakeview Avenue
Spring Valley, CA 91977

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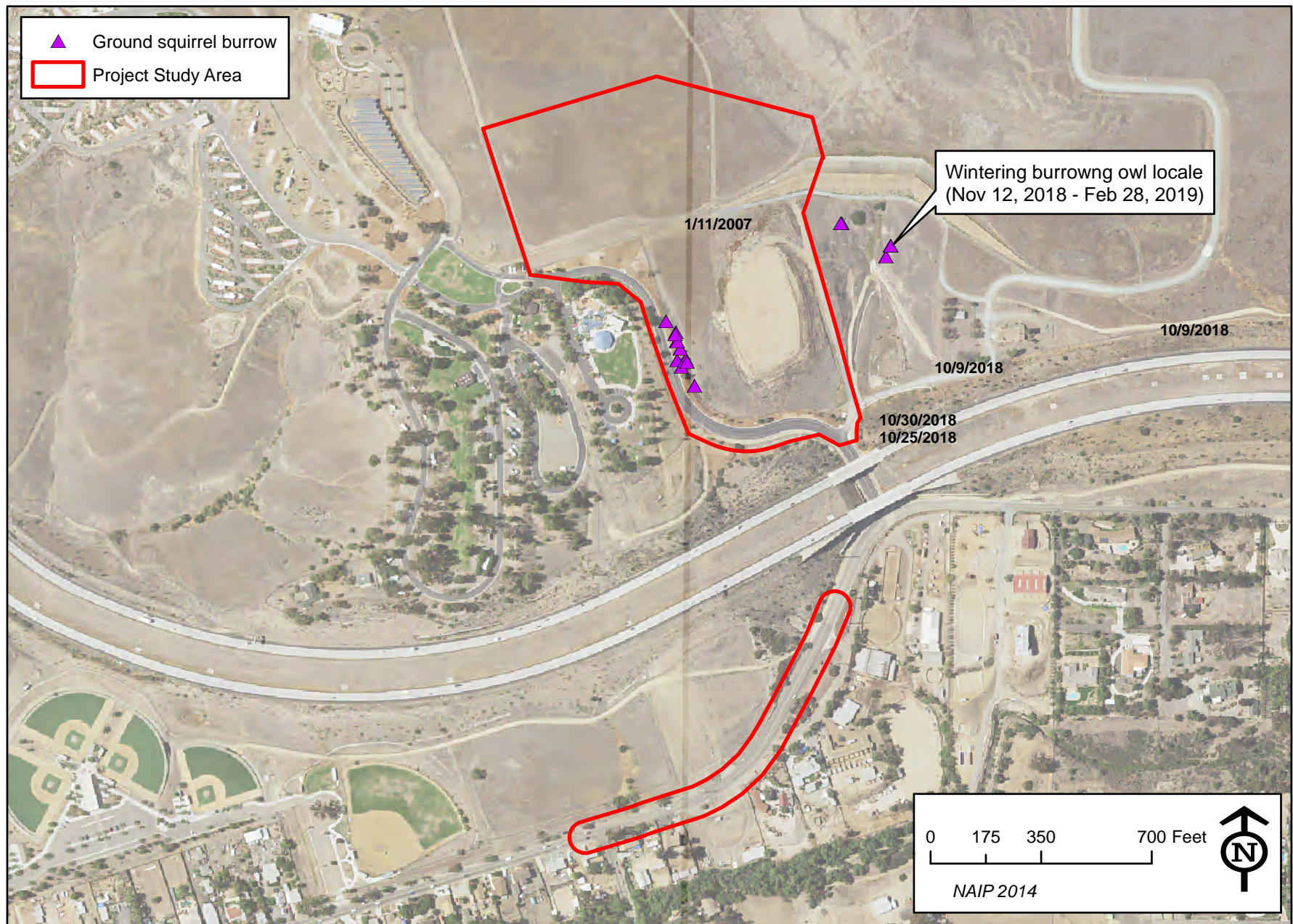


Figure 1. Burrowing Owl Survey Results (March 26 - June 28, 2019)
Central Wheeler Tank Project



Attachment D
Otay Tarplant Survey Results



Memorandum

TO: Erick Del Bosque, Engineering Manager
Israel Marquez, Environmental Project Manager

FROM: Pete Famolaro, Biologist

DATE: September 20, 2019

SUBJECT: Otay Tarplant Surveys for the Central Wheeler Tank Project

This memo describes the methods, results, and conclusions for the recent Otay tarplant (*Deinandra conjugens*) survey for the Central Wheeler Tank Project (Project) being planned at Sweetwater Reservoir, San Diego County, California. The Project, as proposed, would construct and operate a 0.8 million gallon above-ground water tank, access road to the tank, tank drain line to Reservoir, and the addition and replacement of water transmission main to deliver water from the new tank. Additionally, an existing County Trail would be temporarily re-routed during the construction. Direct impacts from the Project are anticipated to 2.47 acres (0.82 acre permanent and 1.65 acres temporary) within the 22.6 Project study area.

Otay tarplant is federally threatened and state endangered. Its range extends from southwest San Diego County into northern Baja California, Mexico (U.S. Fish and Wildlife Service (USFWS) 2004). This annual species is in the sunflower family (*Asteraceae*), occurring in grassland and upland shrub plant communities with underlying clay soils (USFWS 2004). Species decline and threats are due primarily to habitat loss, habitat fragmentation, and habitat degradation (USFWS 2004). Robust populations are known at the Sweetwater Reservoir site (Reservoir) (P. Famolaro, pers. obs.), much of which is mapped as Federal Critical Habitat (USFWS 2002).

Site Description

The 22.6 acre Project study area includes undeveloped and disturbed areas within the southeast corner of the Reservoir property as well as developed road areas along Summit Meadow Road and San Miguel Road. Within the Reservoir property, the South Dike clean landfill and portions of the South Dike are included in the study area. Terrain is flat to moderately steep with elevations ranging from approximately 180 to 350 above mean sea level. The study area is bordered by the Sweetwater Summit Regional Park (County Park) to the west and north, the Reservoir to the north and northeast, and undeveloped land to the east on the Reservoir property and the adjoining San Diego National Wildlife Refuge (Refuge).

Habitat Conditions

Notwithstanding soils deposited on the clean landfill, natural underlying soils within the Project study area have been mapped as Olivenhain cobbly loam (U.S. Department of Agriculture 1973). The Olivenhain series is a clay soil type known to support Otay tarplant (USFWS 2004). Vegetatively, the

study area is largely characterized as non-native grassland and ruderal/disturbed. Non-native grassland comprises the northern portion of the study area, while ruderal/disturbed vegetation largely occupies the southern portion. The non-native grassland is heavily thatched over and consists primarily of wild oat (*Avena* sp.), rye grass (*Lolium* sp.), and ripgut grass (*Bromus diandrus*) with patchy and sporadic prickly lettuce (*Lactuca serriola*) and Russian thistle (*Salsola tragus*) emerging from the heavy grass thatch. Ruderal/disturbed areas include very dense crown daisy (*Glebionis coronaria*) mixed with areas of wild oat, rye grass, ripgut grass, prickly lettuce, Russian thistle, as well as less frequent fountain grass (*Pennisetum setaceum*), black mustard (*Brassica nigra*), Canadian horsetweed (*Conyza canadensis*), and sweet fennel (*Foeniculum vulgare*). Developed or other disturbed land covers within the study area include the clean landfill, South Dike, and existing dirt road and fuel break areas that are maintained and provide open ground/non-vegetated habitat.

Species Background in the Vicinity of the Project

Otay tarplant is known to occur in low to high concentrations in several areas near the Project study area where grassland and weedy habitats have appropriate clay soils (P. Famolaro existing data, McMillan 2000 and 2001, Figure 1). Otay tarplant detectability can highly variable, where the species is present in some years can be absent or low numbers in another year (USFWS 2002). Prior surveys for Otay tarplant within the Project study area did not reveal this species (McMillan 2000, 2001, 2003, 2004, and 2005). However, most recently, a patch of Otay tarplant (13 individuals) was recorded in the Project study area in disturbed habitat along the margin of the South Dike clean landfill in 2017 (Figure 1) (Amec Foster Wheeler 2017).

Methods and Limitations

I performed focused searches for Otay tarplant within the Project study area on May 28, June 7, June 13, and June 26, 2019. Each survey took between 60 and 90 minutes and involved foot traverse of the grassland and ruderal/disturbed habitat areas while carefully looking for Otay tarplant. For each Project survey, one of three Otay tarplant reference sites on the Sweetwater Reservoir property were also checked on the same day to gage flowering status and detectability. The closest reference site to the Project study area is shown on Figure 1. The winter and spring 2018-2019 was considered a “good” rain year (16.56 inches of rain measured at Sweetwater Reservoir), thus rainfall amount was likely not a factor affecting Otay tarplant germination and growth.

Results

No Otay tarplant was identified in the Project study area as a result of these surveys, including the formerly recorded site along the margin of the clean landfill. Otay tarplant species was in flower and easily detectable at all three reference sites during the survey period.

Conclusions and Recommendations

Otay tarplant has been identified in the Project study area in 2017, however, it was not detected in this current year. Rainfall amount was also likely not a factor in Otay tarplant detection, and the species was readily found at each of three reference sites. Although recorded in the Project study area in 2017, Otay tarplant has not been recorded in the Project impact areas (permanent or temporary) in several years of survey. The potential for future occurrence in Project impact areas is considered moderate to high

Memo to: Erick Del Bosque
Date: September 20, 2019
Subject: Otay Tarplant Survey for the Central Wheeler Tank Project
Page 3

given the proximity of known occurrence and suitability of habitat conditions (soil and vegetation). Prudent measures to avoid or minimize potential impacts are as follows.

- If construction commences prior to May 2020, no additional measures are needed. If project initiation is May 2020 or beyond, an inspection for the species is recommended to verify absence in the Project footprint areas only. If present, contact the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) to secure permitting as necessary. Unavoidable impacts should be mitigated in the form of permanent conservation and management of similar occupied or potential Otay tarplant habitat on the Reservoir property at a ratio to be agreed on with USFWS and/or CDFW. The conserved mitigation area may require restoration if Otay tarplant is lacking and can also co-occur with any mitigation for permanent habitat loss from the Project (i.e. 0.82 acre combined non-native grassland and ruderal/disturbed habitats).

Other Rare or Sensitive Plant Observations

One San Diego County viguiera (*Bahiopsis laciniata*) was detected on the western margin of the clean landfill (Figure 1).

References

- Amec Foster Wheeler. 2017. Results of Botanical Surveys at Sweetwater Reservoir. September 22. Letter to Sweetwater Authority contained in the Final Biological Resources Assessment for the Sweetwater Authority Sweetwater Dam Improvement Project, Chula Vista, San Diego County. November. Amec Foster Wheeler Project No. 1315103913
- McMillan Biological Consulting. 2000. Survey Report for Rare Plant and Vernal Pool Surveys on an 150 Acre Site at Sweetwater Reservoir. Prepared for Sweetwater Authority. July 18.
- McMillan Biological Consulting. 2001. Rare Plant and Vernal Pool Update Surveys on the Sweetwater Reservoir Fishing and Recreation Project. Letter to Sweetwater Authority. September 27.
- McMillan Biological Consulting. 2006. Biological Technical Report of the Central Wheeler Tank Project. Prepared for Sweetwater Authority. January.
- U.S. Department of Agriculture. 1973. *Soil Survey, San Diego Area, California*. Prepared by R. H. Bowman et.al., Soil Conservation Service and Forest Service.
- U.S. Fish and Wildlife Service. 2002. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for *Deinandra conjugens* (Otay tarplant). Final Rule. *Federal Register*. Vol. 67, No. 237. December 10.
- U.S. Fish and Wildlife Service. 2004. Recovery Plan for *Deinandra conjugens* (Otay tarplant). Portland, Oregon. vii + 65 pp.
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Memo to: Erick Del Bosque
Date: September 20, 2019
Subject: Otay Tarplant Survey for the Central Wheeler Tank Project
Page 4

I certify that the information in this survey report fully and accurately represents my work.

A handwritten signature in cursive script, reading "Peter Jamolas".

Sweetwater Authority
Biologist

Robert A. Perdue Water Treatment Plant
100 Lakeview Avenue
Spring Valley, CA 91977

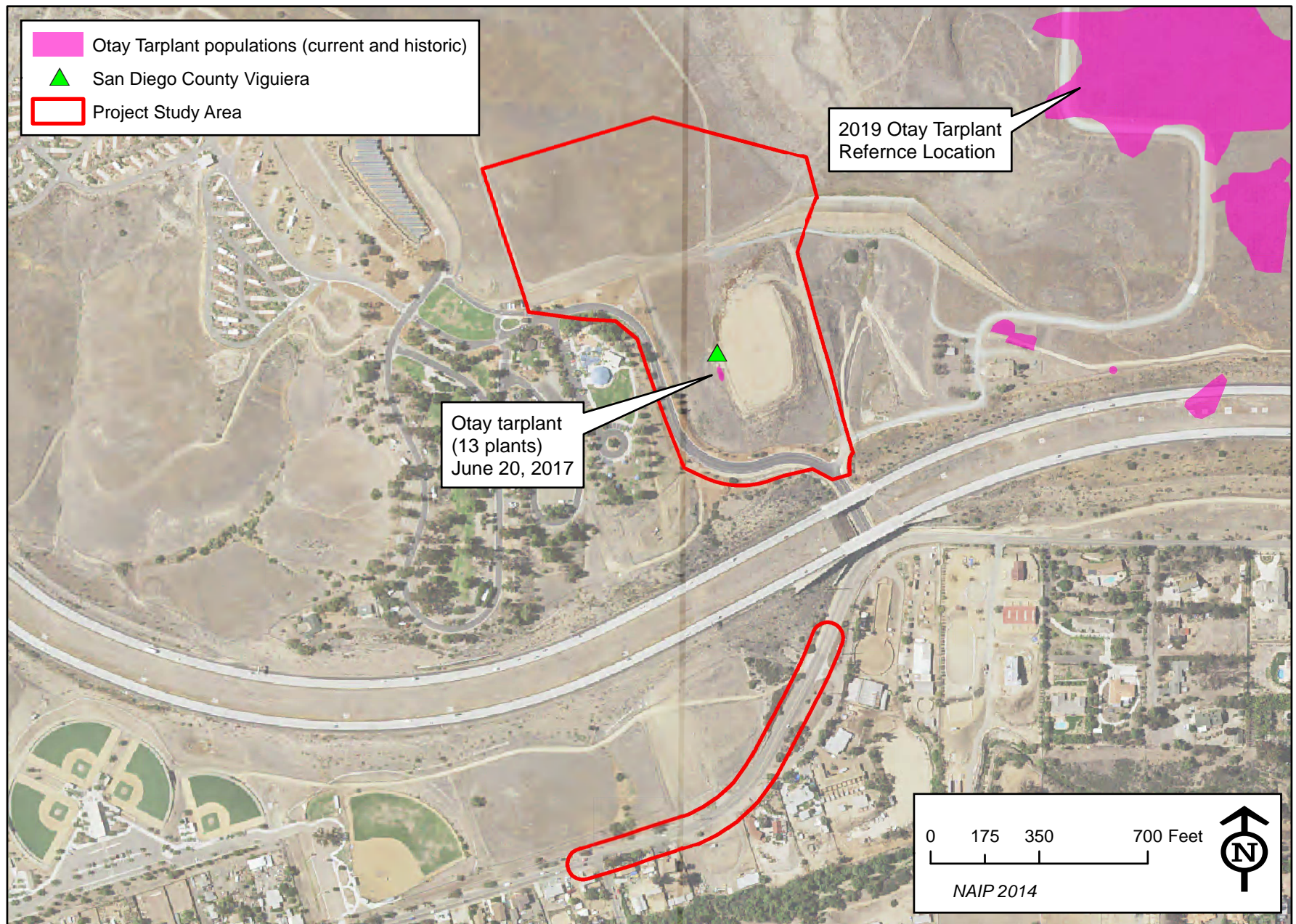


Figure 1. Otay Tarplant Survey Results (May 28 - June 26, 2019)
Central Wheeler Tank Project



Attachment E

Floral Compendium

APPENDIX E: ESA FLORAL COMPENDIUM

GYMNOSPERMS

Scientific Name

Pinaceae

- * *Pinus sp.*

Common Name

Pine Family

ornamental pine

EUDICOTS

Scientific Name

Aizoaceae

- * *Mesembryanthemum crystallinum*

Amaranthaceae

- * *Amaranthus albus*

Anacardiaceae

Rhus integrifolia

- * *Schinus terebinthifolius*

Apiaceae

- * *Foeniculum vulgare*

Asteraceae

Baccharis pilularis

Baccharis sarothroides

Baccharis salicifolia

- * *Glebionis coronarium*

- * *Hypochaeris glabra*

- * *Lactuca serriola*

- * *Helminthotheca echioides*

Heliotropium curassavicum

Sonchus oleraceus

Bahiopsis laciniata

- * *Centaurea melitensis*

Brassicaceae

- * *Brassica nigra*

Chenopodiaceae

- * *Salsola tragus*

Euphorbiaceae

- * *Euphorbia maculata*

Common Name

Fig-Marigold Family

Common iceplant

Amaranth Family

tumbling pigweed

Sumac Family

lemonade sumac

Brazilian peppertree

Carrot Family

sweet fennel

Aster Family

coyotebrush

desertbroom

mulefat

crowndaisy

smooth cat's ear

prickly lettuce

bristly ox-tongue

salt heliotrope

common sowthistle

San Diego viguiera

toocalote/ Maltese star-thistle

Mustard Family

black mustard

Goosefoot Family

prickly Russian thistle

Spurge Family

spotted spurge

EUDICOTS

Scientific Name

Fabaceae

- * *Acacia* sp.
- * *Medicago polymorpha*
- * *Melilotus* sp.

Fagaceae

Quercus agrifolia

Malvaceae

- * *Malva parviflora*

Myrsinaceae

- * *Anagallis arvensis*

Myrtaceae

- * *Eucalyptus* sp.

Papaveraceae

Canbya candida

Platanaceae

- * *Platanus* sp.

Polygonaceae

- * *Rumex crispus*

Solanaceae

- * *Nicotiana glauca*

Common Name

Legume Family

Acacia
bur clover
sweetclover

Oak Family

coast live oak

Mallow Family

cheeseweed

Myrsine Family

scarlet pimpernel

Myrtle Family

gum tree

Poppy Family

pygmy poppy

Sycamore Family

ornamental sycamore

Buckwheat Family

curly dock

Nightshade Family

tree tobacco

MONOCOTYLEDONS

Scientific Name

Cyperaceae

- * *Cyperus rotundus*

Poaceae

- Avena* sp.
- * *Bromus diandrus*
- * *Bromus hordeaceus*
- * *Bromus madritensis ssp. rubens*
- * *Cynodon dactylon*
- * *Hordeum murinum*
- * *Festuca perennis*
- * *Pennisetum setaceum*
- * *Polypogon monspeliensis*

Common Name

Sedge Family

purple nutsedge

Grass Family

oat
ripgut grass
soft chess
foxtail chess
Bermuda grass
glaucous foxtail barley
Italian ryegrass
African fountain grass
annual beard grass

Attachment F

Faunal Compendium

APPENDIX F: ESA FAUNAL COMPENDIUM

BIRDS

Scientific Name

Common Name

ACCIPITRIFORMES

Accipitridae

Hawks

Buteo jamaicensis

red-tailed hawk

ANSERIFORMES

Anatidae

Waterfowl

Anas platyrhynchos

mallard

APODIFORMES

Trochilidae

Hummingbirds

Calpte anna

Anna's hummingbird

COLUMBIFORMES

Columbidae

Pigeons and Doves

Zenaida macroura

mourning dove

PASSERIFORMES

Tyrannidae

Tyrant Flycatchers

Sayornis nigricans

black phoebe

Corvidae

Jays and Crows

Corvus brachyrhynchos

American crow

Icteridae

Blackbirds

Sturnella neglecta

western meadowlark

Aulaudidae

Larks

**Eremophila alpestris*

Horned lark

Emberizidae

New World Sparrows

**Ammodramus savannarum*

Grasshopper sparrow

MAMMALS

Scientific Name

Leporidae

Sylvilagus audubonii

Sciuridae

Otospermophilus beecheyi

Common Name

Hares and Rabbits

desert cottontail

Squirrels and Chipmunks

California ground squirrel

*reported by others

Attachment G

**Special-Status Plant Species
Potential to Occur Table**

APPENDIX G. SPECIAL-STATUS PLANT SPECIES OBSERVED OR WITH POTENTIAL TO OCCUR

| Scientific Name | Common Name | Flowering Period | Federal | State | Local (CRPR/ Other) | Preferred Habitat | Distribution | Potential to Occur On Site |
|----------------------------|---------------------------|------------------|---------|-------|---------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Asteraceae | Sunflower Family | | | | | | | |
| <i>Ambrosia monogyra</i> | singlewhorl burrobrush | Aug.-Nov. | None | None | 2B.2 | Chaparral, coastal scrub, desert dunes/sandy; dry, sunny grasslands on disturbed sites. 10-500 meters. | Riverside, San Bernardino, San Diego, Baja California, Orange, Imperial. | Not present. The species is known within a mile to the north of the BSA in disturbed road/trail edge habitat conditions (P. Famolaro, pers. comm.). The species is a conspicuous perennial shrub and would have been observed during the survey if present. |
| <i>Ambrosia pumila</i> | San Diego ambrosia | Apr.-Oct. | FE | None | 1B.1 | Chaparral, coastal scrub, valley and foothill grassland, vernal pools. 20-415 meters. | San Diego, Riverside. | Not present. The species is not known to the Sweetwater Reservoir property, with the nearest populations in the Sweetwater River watershed occurring several miles upstream (P. Famolaro, pers. comm). It could potentially occur in clay soils on-site, however, the species is a conspicuous perennial herb and would have been observed during the survey if present. |
| <i>Bahiopsis laciniata</i> | San Diego County viguiera | Feb.-Jun. | None | None | 4.3 | Chaparral, coastal scrub; grows along slopes and ridgelines. 60-750 meters. | San Diego, Orange, Riverside, Los Angeles, Ventura. | Observed. One individual was observed within the BSA during surveys. |

| Scientific Name | Common Name | Flowering Period | Federal | State | Local (CRPR/ Other) | Preferred Habitat | Distribution | Potential to Occur On Site |
|------------------------------------------------|----------------------|------------------|---------|-------|---------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Deinandra conjugens</i> | Otay tarplant | May-Jun. | FT | SE | 1B.1 | Coastal scrub, valley and foothill grassland. 25-300 meters. | San Diego. | Present within the BSA. Moderate to High potential in the project impact area. Grassland and disturbed habitat with suitable clay soils is present within the BSA, including project impact areas. This species was not detected during focused surveys conducted in spring 2019, however, the BSA occurs within designated critical habitat for this species and it was previously documented within the BSA in June 2017 (Amec Foster Wheeler 2017 and Attachment D). |
| <i>Holocarpha virgata</i> ssp. <i>elongata</i> | graceful tarplant | May-Nov. | None | None | 4.2 | Chaparral; cismontane woodland; coastal scrub; valley and foothill woodland; valley grassland 60 - 1100 meters. | Orange, Riverside, San Diego. | Low to Moderate. This species is locally common on the Sweetwater Reservoir property where suitable habitat exists (P. Famolaro, pers. comm.). This species was not detected in potential disturbed areas and grasslands in the BSA. It would have been in flower at the time of the survey and would have been observed if present. The disturbed nature of habitats on site limits the potential for occurrence. |
| <i>Isocoma menziesii</i> var. <i>decumbens</i> | decumbent goldenbush | Apr.-Nov. | None | None | 1B.2 | Chaparral and coastal scrub; sandy, often in disturbed areas. 10-135 meters. | Los Angeles, Orange, San Diego. | Not present. This species is relatively common on the Sweetwater Reservoir property where suitable habitat exists (P. Famolaro, pers. comm.) and could potentially occur in the BSA, however, it is a conspicuous perennial shrub that would have been observed during the survey if present. |

| Scientific Name | Common Name | Flowering Period | Federal | State | Local (CRPR/ Other) | Preferred Habitat | Distribution | Potential to Occur On Site |
|-------------------------------|------------------------------|------------------|---------|-------|---------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cactaceae | Cactus Family | | | | | | | |
| <i>Ferocactus viridescens</i> | San Diego barrel cactus | May-Jun. | None | None | 2B.1 | Chaparral, coastal scrub, valley grasslands 3-450 meters. | San Diego, Baja California. | Not present. This species is relatively common on the Sweetwater Reservoir property where suitable habitat exists (P. Famolaro, pers. comm.) and could potentially occur in the BSA, however, it is a conspicuous perennial cactus that would have been observed during the survey if present. |
| Convolvulaceae | Morning-glory Family | | | | | | | |
| <i>Convolvulus simulans</i> | Small-flowered morning-glory | Mar.-Jul. | None | None | 4.2 | Clay soils, serpentinite seeps; openings in chaparral; coastal sage scrub; valley and foothill grassland. 0-305 meters. | Kern, Los Angeles, Riverside, Orange, San Diego, Santa Barbara. | High. This species was identified immediately adjacent to the BSA in similar grassland habitat (McMillan 2006, RECON 2009) and occurs in denser concentrations in grassland habitat to the east of the BSA (P. Famolaro, pers. comm.). This species, however, was not detected in the BSA during the current surveys. It has a high potential for occurrence given suitable soils and proximity of known populations. |
| Crassulaceae | Stonecrop Family | | | | | | | |
| <i>Dudleya variegata</i> | Variegated dudleya | Apr.-Jul. | None | None | 1B.2 | Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools in clay substrate. 3-580 meters. | San Diego County and Baja California. | Low to very low. The species is known to the east of the BSA in mixed grassland and scrub habitat (P. Famolaro, pers. comm.). It was not detected in recent surveys of the BSA or earlier surveys on site. While it potentially could occur in clay soil habitat within the BSA, the disturbed nature of habitats in the BSA limits potential for occurrence. |
| Lamiaceae | Mint Family | | | | | | | |

San Diego / Project No. D150772.00

Attachment H

**Special-Status Wildlife Species
Potential to Occur Table**

APPENDIX H: SPECIAL-STATUS WILDLIFE SPECIES OBSERVED OR WITH POTENTIAL TO OCCUR

| Scientific Name | Common Name | Federal | State | Preferred Habitat | Potential for Occurrence in the Study Area |
|--------------------------------|------------------------------|---------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| INVERTEBRATES | | | | | |
| <i>Euphydryas editha quino</i> | Quino checkerspot butterfly | | | Restricted to Riverside and San Diego Counties in California, and northern areas of Baja California Norte, Mexico (Mexico). Habitat characterized by patchy shrub or small tree landscapes with openings of several meters between woody plants, or a landscape of open swales alternating with dense patches of shrubs. | Low to Very Low. BSA contains dense non-native grassland and disturbed habitat lacking species' host plants, as well as known nectar sources. Additionally, previous results for protocol surveys were negative for surveys conducted in 2002-2002, 2009, and 2017 within the BSA, and surveys conducted in 2017 are representative of current site conditions (Wood 2019, Attachment A). |
| REPTILES | | | | | |
| Phrynosomatidae | Iguanid Lizard Family | | | | |
| <i>Phrynosoma blainvillii</i> | coast horned lizard | None | SSC | Prefers sandy riparian and sage scrub habitats but also occurs in valley-foothill hardwood, conifer, pine-cypress, juniper and annual grassland habitats below 6,000 feet, open country, especially sandy areas, washes, flood plains, and windblown deposits. | Low. The species is known to the east on the Sweetwater Reservoir property (P. Famolaro, pers. comm.). While it potentially could occur in the BSA, the likelihood of occurrence is considered low given the general lack of sandy substrate and disturbed nature of habitat on site. |

| Scientific Name | Common Name | Federal | State | Preferred Habitat | Potential for Occurrence in the Study Area |
|------------------------------------------------|--------------------------|---------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Teiidae | Whiptail Family | | | | |
| <i>Aspidoscelis hyperythra</i> | orange-throated whiptail | None | SSC | Semi-arid brushy areas typically with loose soil and rocks, including washes, streamsides, rocky hillsides, coastal chaparral, grassland, and disturbed sites. | High. The species is known within one mile of the BSA in similar disturbed habitat (p. Famolaro, pers. comm.). It was not detected during the surveys, but likelihood of occurrence is considered high. |
| Scincidae | Skink Family | | | | |
| <i>Plestiodon skiltonianus interparietalis</i> | Coronado skink | None | SSC | Occurs in woodland and scrub habitats with leaf litter and sandy substrates. | High. The Coronado skink was identified in the BSA during the survey in 2009 (RECON 2009). There have been no major disturbance to the habitat in the BSA since then, and therefore, species presence is still expected (p. Famolaro, pers. comm.). |
| Viperidae | Vipers | | | | |
| <i>Crotalus ruber</i> | red-diamond rattlesnake | None | SSC | Chaparral, woodland, grassland, and desert. In rocky areas and dense vegetation. | Low. The species is known to occur on the Sweetwater Reservoir property to the east. However, these known locales are in less disturbed habitat that also contain rocky outcrop areas (P. Famolaro, pers. comm.). There is potential for the species to occur in the BSA, but is considered moderate to low due to the disturbed nature of habitats and lack of rocky habitat. |

| Scientific Name | Common Name | Federal | State | Preferred Habitat | Potential for Occurrence in the Study Area |
|--------------------------|------------------------------------------------|---------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BIRDS | | | | | |
| Accipitridae | Hawks, Kites, Harriers and Eagle Family | | | | |
| <i>Accipiter cooperi</i> | Cooper's hawk | None | WL (nesting) | Fairly common winter visitor in California in both open space and urban areas. Nests primarily in fairly dense oak and riparian woodlands and can also nest in non-native trees such as eucalyptus. Forages over open lands. | Moderate. The species commonly occurs on the Sweetwater Reservoir property, including nesting (P. Famolaro, pers. comm.). No nesting was detected as a result of the survey, but potential nest habitat exists in mature landscape trees along Summit Meadow Road along the western boundary of the BSA. |
| | | | | | |
| <i>Elanus leucurus</i> | White-tailed kite | None | SFP (nesting) | Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes nest to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching. | Low (for nesting). The species is known to occur within the BSA for foraging and nests elsewhere on the Sweetwater Reservoir property (P. Famolaro, pers. comm.). While the species or nests were not detected in BSA during the current survey, there is a low potential for nesting in dense landscaping shrubs along the western boundary of the BSA. |

| Scientific Name | Common Name | Federal | State | Preferred Habitat | Potential for Occurrence in the Study Area |
|------------------------------|---------------------------|---------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Circus hudsonius</i> | Northern harrier | none | SSC (nesting) | Coastal salt marshes, freshwater marshes, grasslands, and agricultural fields; occasionally forages over open desert and brushlands. | Very low (for nesting). The species is known to occur within the BSA for foraging, however, there are no recent nesting records (P. Famolaro, pers. comm.). It was not detected in BSA during the current survey, and potential for nesting in the non-native grassland with the BSA is considered very low. |
| Aulaudidae | New World Sparrows | | | | |
| <i>Eremophila alpestris</i> | Horned lark | None | WL | Prairies, fields, airports, shores, tundra. Inhabits open ground, generally avoiding areas with trees or even bushes. May occur in a wide variety of situations that are sufficiently open: short-grass prairies, extensive lawns (as on airports or golf courses), plowed fields, stubble fields, beaches, lake flats, dry tundra of far north or high mountains. | Observed. This species was observed within the BSA in the developed area associated with the Clean Fill Site (Attachment B). |
| Emberizidae | Sparrow Family | | | | |
| <i>Ammodramus savannarum</i> | grasshopper sparrow | None | SSC | Dense grasslands on rolling hills, lowland plains, in valleys & on hillsides on lower mountain slopes; prefers native grasslands with a mixture of grass and forb species with some shrubs. Somewhat colonial during nesting. | High. Project supports non-native grassland suitable for nesting. Species was observed in the non-native grassland habitat immediately adjacent to the BSA, and wintering individuals were observed within the BSA in 2007 (Attachment B). |

| Scientific Name | Common Name | Federal | State | Preferred Habitat | Potential for Occurrence in the Study Area |
|----------------------------|-------------------|---------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strigidae | Owls | | | | |
| <i>Athene cunicularia</i> | burrowing owl | None | SSC | Dry grasslands, desert habitats, open-pinyon-juniper and ponderosa pine woodlands below 5,300 feet elevation. Prefers berms, ditches, and grasslands adjacent to rivers, agricultural, and scrub areas. | High. Burrowing owl was not observed within the BSA during protocol surveys conducted in 2019, but suitable burrows exist within the disturbed habitat on-site in the western portion of the BSA. Additionally, a wintering owl was observed within the BSA in 2007, as well as immediately adjacent to the BSA in fall/winter 2018-19 (Attachment C). |
| Laniidae | | | | | |
| <i>Lanius ludovicianus</i> | Loggerhead shrike | None | SSC (nesting) | In San Diego County, uncommon year-round resident in grassland, open sage scrub, chaparral, and desert scrub. Preferred nesting in dense-foliaged thorny shrubs or small trees. | Moderate. The species is known to the Sweetwater Reservoir property (P. Famolaro, pers. comm.). While it was not detected during the surveys, the site is likely to be used as foraging habitat and there is a moderate potential to nest in dense landscaping shrubs along the western boundary of the BSA. |

| Scientific Name | Common Name | Federal | State | Preferred Habitat | Potential for Occurrence in the Study Area |
|--------------------------------------------|-----------------------------------------|---------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sylviidae | Old World Warblers, Gnatcatchers | | | | |
| <i>Poliophtila californica californica</i> | Coastal California gnatcatcher | FT | SSC | Coastal sage scrub vegetation below 2,500 feet elevation in Southern California; generally avoids steep slopes and dense vegetation for nesting. | High. This species is not expected to nest within the BSA due to the lack of suitable coastal sage scrub habitat for nesting, as well as negative survey results during protocol surveys conducted in 2019 (Attachment B). However this species may occur on-site as wintering and dispersing individuals due to previous observations within the BSA in 2007 and immediately adjacent to the BSA in 2018, as well as documented populations off-site in the general vicinity (Attachment B). |
| MAMMALS | | | | | |
| Molossidae | Free-tailed Bats | | | | |
| <i>Eumops perotis californicus</i> | western mastiff bat | None | SSC | Chaparral; cismontane woodland; coastal scrub; valley and foothill grassland; mainly within arid open habitats. Preferred roosting habitat consists of crevices within rock outcrops and tall buildings, although this species has been known to use trees and tunnels for roost sites. Feeds on flying insects. | High (for foraging). Known to occur at the Sweetwater Reservoir property (San Diego Natural History Museum 2012) and the BSA would likely be inclusive within species foraging areas. There is no roosting habitat within the BSA. |

| Scientific Name | Common Name | Federal | State | Preferred Habitat | Potential for Occurrence in the Study Area |
|---------------------------------|--------------------------|---------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Nyctinomops femorosaccus</i> | pocketed free-tailed bat | None | SSC | Joshua tree woodland; pinyon and juniper woodland; desert scrub, palm oasis, desert wash, and desert riparian; Sonoran desert scrub. Typically roost in caves and rocky outcrops; prefers cliffs in order to obtain flight speed. Feeds on insects flying, over bodies of water or arid desert habitats to capture prey. | High (for foraging). Known to occur at the Sweetwater Reservoir property (San Diego Natural History Museum 2012) and the BSA would likely be inclusive within species foraging areas. There is no roosting habitat within the BSA. |
| <i>Choeronycteris mexicana</i> | Mexican long-tongued bat | None | SSC | Occasionally found in San Diego County, which is on the northern limit of their range; feeds on nectar and pollen of night-blooming succulents; roosts in relatively well-lit caves and within buildings. | High (for foraging). The BSA would likely be inclusive within species foraging areas. There is no roosting habitat within the BSA. |
| <i>Nyctinomops macrotis</i> | big free-tailed bat | None | SSC | Low-lying arid areas in Southern California. Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths. | High (for foraging). The BSA would likely be inclusive within species foraging areas. There is no roosting habitat within the BSA. |
| <i>Lasiurus blossevillii</i> | western red bat | None | SSC | Roosts primarily in forests and woodlands from sea level up through mixed conifer forests and are often in edge habitats adjacent to streams, fields, or urban areas. | High (for foraging). The BSA would likely be inclusive within species foraging areas. Though some trees occur at the edge of the BSA which could provide marginal roosting habitat, no roosting habitat occurs within the project impact area. |

| Scientific Name | Common Name | Federal | State | Preferred Habitat | Potential for Occurrence in the Study Area |
|-------------------------------------|-----------------------------------|---------|-------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Lasiurus cinereus</i> | Hoary bat | None | SSC | Roosts in dense foliage of medium to large trees. Feed primarily on moths. | High (for foraging). The BSA would likely be inclusive within species foraging areas. Though some trees occur at the edge of the BSA which could provide marginal roosting habitat, no roosting habitat occurs within the project impact area. |
| Leporidae | Hares and Rabbit Family | | | | |
| <i>Lepus californicus bennettii</i> | San Diego black-tailed jackrabbit | None | SSC | Open brushlands and scrub habitats between sea level and 4,000 feet elevation. | High. The species occurs commonly on the Sweetwater Reservoir property with known locations within one-half mile of the BSA, including coastal sage scrub, grassland, as well as disturbed habitats (P. Famolaro, pers. comm.). It was not detected during the survey, but the likelihood of occurrence is considered high due to similarity of habitat and close proximity of known locations. |

| Scientific Name | Common Name | Federal | State | Preferred Habitat | Potential for Occurrence in the Study Area |
|----------------------|-------------------------------------------|---------|-------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mustelidae | Weasels, Skunks, and Otters Family | | | | |
| <i>Taxidea taxus</i> | American badger | None | SSC | Drier, open stages of shrubland, forest, and herbaceous habitats with friable soils. | Low. Though suitable non-native grassland habitat occurs within the BSA, no evidence of badger burrows was observed on site and this species is uncommon within San Diego County. |
| FE | Federally Listed as Endangered | SE | | State Listed as Endangered | |
| FT | Federally Listed as Threatened | ST | | State Listed as Threatened | |
| FPE | Federally Proposed as Endangered | SCE | | State Candidate for Endangered | |
| FPT | Federally Proposed as Threatened | SCT | | State Candidate for Threatened | |
| FPD | Federally Proposed for Delisting | SFP | | State Fully Protected | |
| | | SSC | | California Species of Special Concern | |
| | | WL | | CDFW Watch List | |

Appendix C

Cultural Resources Report

Public Version

CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT

Cultural Resources Assessment Report

Prepared for
Sweetwater Authority
505 Garrett Avenue
Chula Vista, CA 91910

November 2020



Public Version

CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT

Cultural Resources Assessment Report

Prepared for:

Sweetwater Authority
505 Garrett Avenue
Chula Vista, CA 91910

November 2020

Prepared by:

ESA
550 West C Street, Suite 750
San Diego, CA 92101

Principal Investigator:

Michael R. Bever, PhD, RPA

Report Authors:

Michael R. Bever, PhD, RPA
Matthew Gonzalez, B.A.

Project Location:

Jamul Mountain and National City USGS 7.5' Topographic Quads,
Township 17 South, Range 1 West, Section 20 and Unsectioned

Acreage: Approx. 20 acres

550 West C Street
Suite 750
San Diego, CA 92101
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TABLE OF CONTENTS

Central-Wheeler Tank and System Improvements Project - Cultural Resources Assessment Report

| | <u>Page</u> |
|---------------------------------------------|-------------|
| Executive Summary | ES-1 |
| Introduction | 4 |
| Project Location | 4 |
| Project Description | 4 |
| Setting | 9 |
| Natural Setting | 9 |
| Prehistoric Setting | 9 |
| Ethnographic Setting | 11 |
| Historical Setting | 12 |
| Regulatory Framework | 14 |
| State | 14 |
| Archival Research | 19 |
| SCIC Records Search | 19 |
| Sacred Lands File Search | 22 |
| Historic Maps and Aerial Photographs | 22 |
| Cultural Resources Survey | 23 |
| Methods | 23 |
| Results | 23 |
| Conclusion and Recommendations | 27 |
| References | 30 |

Appendices

- A. Personnel
- B. NAHC Sacred Lands File Search
- C. Confidential Resource Location Map – Bound Separately
- D. Confidential DPR Site Record Form – Bound Separately

Page

List of Figures

| | | |
|---|--------------------------|----|
| 1 | Regional Location | 6 |
| 2 | Project Location | 7 |
| 3 | Project Components | 8 |
| 4 | Survey Photos | 25 |
| 5 | Survey Photos | 26 |

List of Tables

| | | |
|---|-------------------------------------------------|----|
| 1 | Previous Cultural Resources Investigations..... | 19 |
| 2 | Previously Recorded Cultural Resources | 21 |

EXECUTIVE SUMMARY

Central-Wheeler Tank and System Improvements Project - Cultural Resources Assessment Report

Sweetwater Authority (Authority) retained Environmental Science Associates (ESA) to conduct a Cultural Resources Assessment for the Central-Wheeler Tank and System Improvements Project (Project). The Project would involve the construction and operation of an 0.8 Million Gallon welded-steel water tank (the Central-Wheeler Tank, or CWT) and construction of associated water drainage and conveyance pipelines. The Project requires compliance with the California Environmental Quality Act (CEQA), with the Authority as the lead agency. This report documents the methods and findings of the cultural resource studies conducted for the Project, and will be used to support the Authority's CEQA process and documentation.

The approximately 20-acre -Study Area for the Project is located in the unincorporated community of Sunnyside in San Diego County, California. The CWT would be installed within Sweetwater Reservoir property, approximately 1,260 feet northwest of the intersection of San Miguel Road and Summit Meadow Road. The Study Area consists of two discontinuous areas: a larger northern block of approximately 19.8 acres and a southern linear portion of approximately 2.8 acres along San Miguel Road. The various components of the Project will occur within this larger Study Area. The Project is located on the Jamul Mountain and National City USGS 7.5' Quads, Township 17 South/Range 1 West, in Section 20 and unsectioned land

A records search for the Project was conducted on December 19, 2018 at the California Historical Resources Information System (CHRIS) South Coastal Information Center (SCIC) housed at San Diego State University. The records search included a review of all recorded archaeological resources, historic architectural resources, and previous studies within a 0.5-mile radius of the Study Area. The records search indicates that 34 cultural resources studies have been conducted within a 0.5-mile radius of the Study Area. Of these 34 studies, 14 have included at least part of the Study Area. As a result, the entirety of the 0.5-mile records search radius, including the Study Area itself, has been included in previous cultural resources studies. The records search results indicate that eight cultural resources have been previously recorded within a 0.5-mile radius of the Study Area. All eight resources are prehistoric archaeological sites. Of the eight resources, one (P-37-005695) is located partially within the Study Area.

The Native American Heritage Commission (NAHC) was contacted on January 9, 2019 to request a search of the Sacred Lands File (SLF). The NAHC responded to the request in a letter dated January 11, 2019. The results of the SLF search conducted by the NAHC was positive, indicating that sites on file are located within the vicinity of the Project. The letter did not provide

the locations or details of the resources identified within the Study Area, but recommended that the Kwaaymii Laguna Band of Mission Indians and the Kumeyaay Cultural Repatriation Committee be consulted regarding the resources. The letter also provided a list of local Native American contacts for the Project. The Authority sent outreach letters to the Native American contacts identified by the NAHC. The letters, dated August 30, 2019, described the Project, summarized the cultural resource studies conducted to date (as summarized in this report), and requested any information the tribes might wish to share. In addition, ESA staff reached out to the Kumeyaay Cultural Repatriation Committee by phone on August 30, 2019. As a result of the outreach, one response was received. By letter dated September 24, 2019, Mr. Ray Teran of the Viejas Band of Kumeyaay Indians (Viejas) indicated that the Project site has cultural significance or ties to Viejas, and requested that a Kumeyaay Cultural Monitor be on site for ground disturbing activity.

On January 15, 2019, ESA cultural resources specialists Michael Vader, B.A. and Joel Aspeytia, B.A. conducted a cultural resources survey of the Study Area. Much of the Study Area's northern portion was covered in ankle to knee high grasses which reduced ground surface visibility to 0-5 percent throughout much of the Study Area. The only areas of visible ground surface were the graded dirt access roads that bisect the center and edges of the Study Area, and the clean fill area. Ground surface visibility within these areas ranged from 50-100 percent. As a result of the survey, eight artifacts associated with previously recorded archaeological site P-37-005695 were identified within the dirt roads in the Study Area where the ground surface was most visible. Artifacts included fine grain metavolcanic (FGMV) primary and secondary flakes, FGMV debitage, one possible FGMV scraper, one FGMV edge-modified primary flake, and one rhyolitic basin metate. While P-37-005695 has been largely destroyed by past development including underground utilities, and a County campground, as well as past agricultural and reservoir-related activity, a small scatter of archaeological materials does remain within the Study Area.

The recorded boundary of resource P-37-005695 overlaps two project components within the Study Area in two areas. Where resource P-37-005695 overlaps the southernmost portion of the Study Area, the resource clearly has been destroyed, as indicated by a recent archaeological testing project where virtually no archaeological materials were found. In contrast, as demonstrated by the field survey, artifacts are present in the northern-most portion of the Study Area. However, these artifacts are surficial in nature and no doubt have been displaced by past agricultural activities and reservoir operations. Furthermore, the elevated topography and shallow, cobbly soils of the knoll indicate that a geological mechanism for burial of archaeological resources is lacking. As such, a subsurface archaeological deposit in this area is highly unlikely. What remains likely constitutes the scattered remnants of the archaeological site, an archaeological site that has largely been destroyed. No cultural materials were found in the area of the proposed tank. That said, given poor surface visibility during the survey, it is possible that additional artifacts are present, and construction of the tank as well as adjacent portions of the proposed water main, tank drain line, and access road, could encounter archaeological materials. While it is highly unlikely that a substantial archaeological deposit remains, it would be prudent to conduct archaeological monitoring during Project construction in this area. Indeed, both the records search and the SLF search indicate that the area should be considered sensitive for archaeological resources, and the Viejas Band of Kumeyaay Indians requested Native

American monitoring of ground disturbing activity. Therefore, recommendations are provided in the *Conclusion and Recommendations* section of the report to ensure that any Project-related impacts to cultural resources are less than significant.

CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT

Cultural Resources Assessment Report

Introduction

Sweetwater Authority (Authority) retained Environmental Science Associates (ESA) to conduct a Cultural Resources Assessment for the Central-Wheeler Tank and System Improvements Project (Project). The Project would involve the construction and operation of an 0.8 Million Gallon welded-steel water tank (the Central-Wheeler Tank, or CWT) and construction of associated water drainage and conveyance pipelines. The Project requires compliance with the California Environmental Quality Act (CEQA), with the Authority as the lead agency. This report documents the methods and findings of the cultural resource studies conducted for the Project, and will be used to support the Authority's CEQA process and documentation.

ESA personnel involved in the preparation of this report are as follows: Michael R. Bever, Ph.D., RPA, Principal Investigator and report author; Matthew Gonzalez, B.A., report author; Michael Vader, B.A., field director; Joel Aspeytia, B.A., surveyor; and Jessie Johnston, GIS specialist. Resumes of key personnel are included in **Appendix A**.

Project Location

The approximately 20-acre Study Area for the Project is located in the unincorporated community of Sunnyside in San Diego County, California, just east of the unincorporated community of Bonita, approximately 9 miles east from downtown, San Diego, and 6 miles northeast of downtown, Chula Vista (**Figure 1**). The Sweetwater Summit Regional Park, Sweetwater Reservoir, Sweetwater Reservoir's Fishing Program, and a trail system are adjacent to or in the vicinity of the Study Area. The CWT would be installed within Sweetwater Reservoir property, approximately 1,260 feet northwest of the intersection of San Miguel Road and Summit Meadow Road. The Study Area consists of two discontinuous areas: a larger northern block of approximately 19.8 acres and a southern linear portion of approximately 2.8 acres along San Miguel Road. The various components of the Project will occur within this larger Study Area. The Project is located on the Jamul Mountain and National City USGS 7.5' Quads, Township 17 South/Range 1 West, in Section 20 and unsectioned land (**Figure 2**).

Project Description

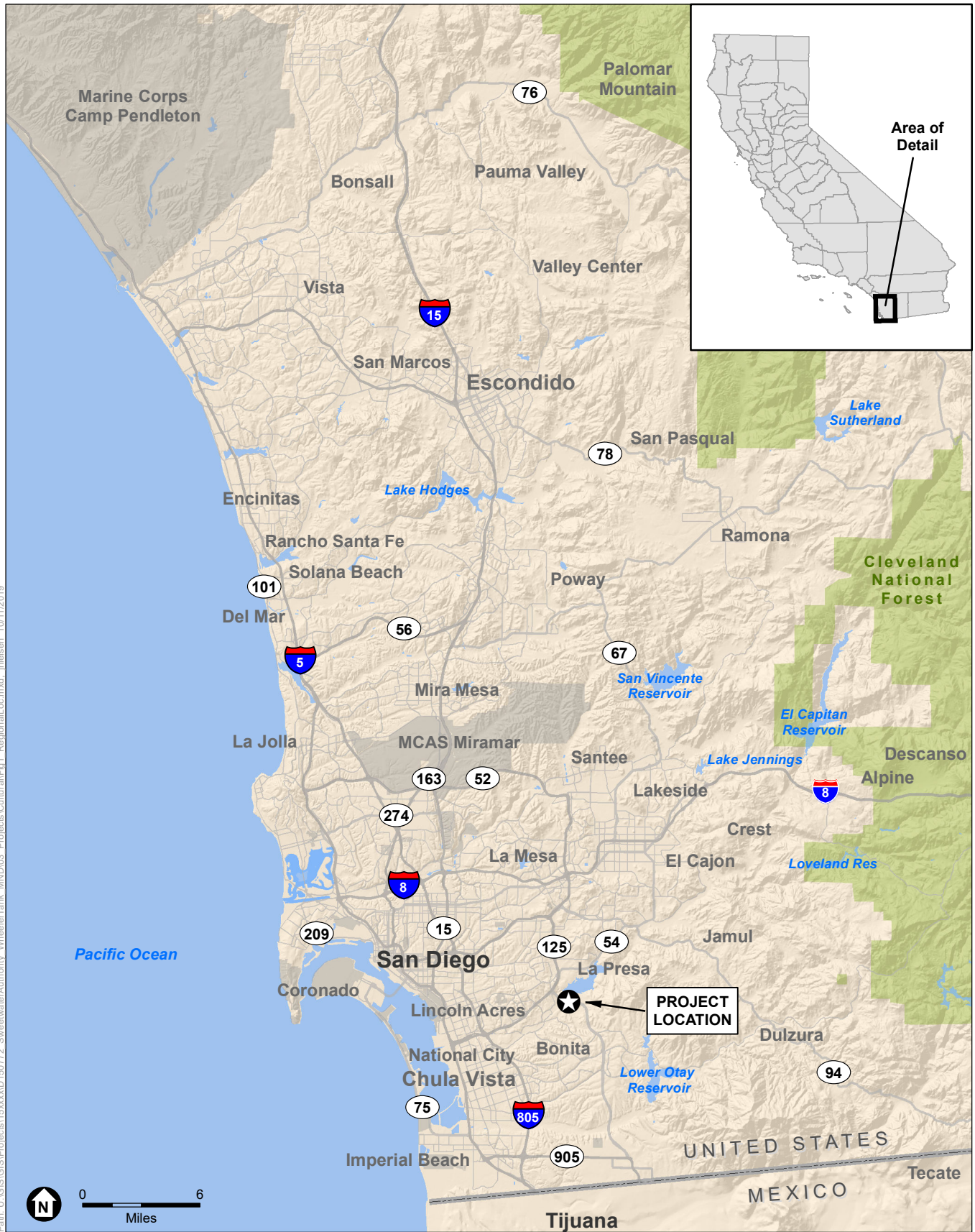
The new 0.8 MG water storage tank would be constructed within a hillside in an undeveloped portion of land owned by the Authority. **Figure 3** shows the various Project components within the Study Area. The top of the hillside has an approximate elevation of 348 feet above mean sea level (amsl). Portions of the hillside would be excavated while lower portions of the hillside be filled, such that the finished floor of the new tank has an elevation of 292 feet amsl. Excess excavated soils would be placed in the Clean Fill Site located approximately 380 feet southeast

from the tank site, within Authority property. The tank would have a height of 27 feet and a diameter of 71 feet and placed on a 4,734 square foot concrete slab. Trees and the hillside will partially block the view of the tank from Sweetwater Summit Regional Park. A 3-foot high concrete retaining wall would be constructed to stabilize the slope and CWT.

To access the CWT, the Authority would extend the existing maintenance road network and add an additional road segment approximately 200 feet in length by 20 feet in width. A ring maintenance driveway around the tank would be asphalt-paved and 16-foot wide. Tank installation would include electrical instrumentation for water level monitoring for wireless data reporting to Authority staff at the Robert A. Perdue Water Treatment Facility.

The proposed Project would include the installation of two sections of 16-inch diameter polyvinyl chloride (PVC) water pipeline: one, approximately 390 feet in length that would connect the CWT to an existing water main along Summit Meadow Road and the second, approximately 1,030 feet in length, would be installed within the public right-of-way (ROW) along San Miguel Road to connect to existing water mains at San Miguel Road. An existing 6-inch asbestos cement (AC) water main along San Miguel Road will be abandoned in-place once the 1,030-foot segment of 16-inch PVC water main is installed. Five existing water service laterals connected to the 6-inch AC water main will be transferred to the new 16-inch PVC water main.

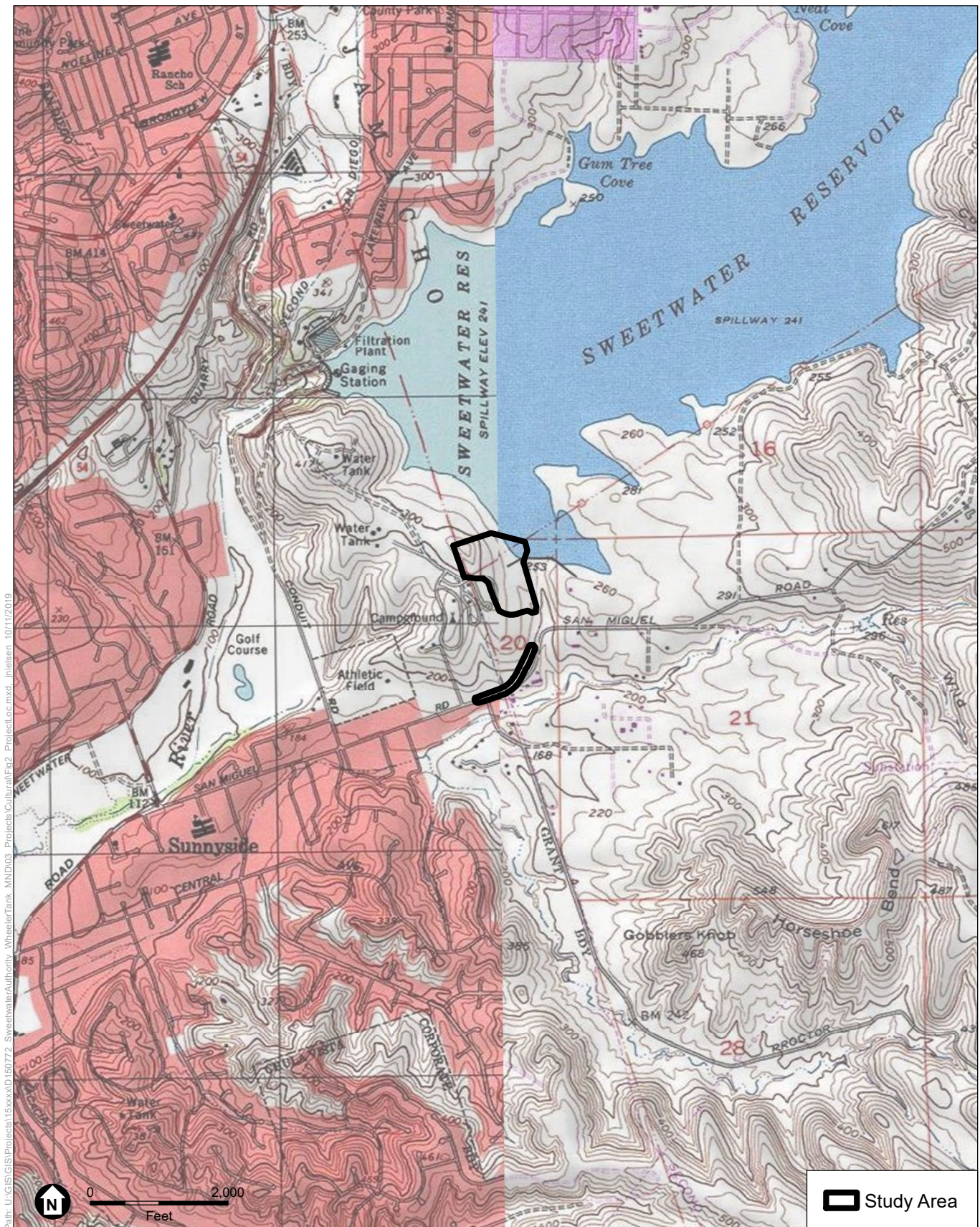
Additionally, the proposed Project would include a 12-inch-diameter PVC drain pipe line approximately 500 feet in length that would connect to the CWT overflow air gap and tank drain structure. The drain pipeline would extend to the southwest side of the Sweetwater Reservoir, just above the reservoir's high water mark elevation of 239 feet amsl.

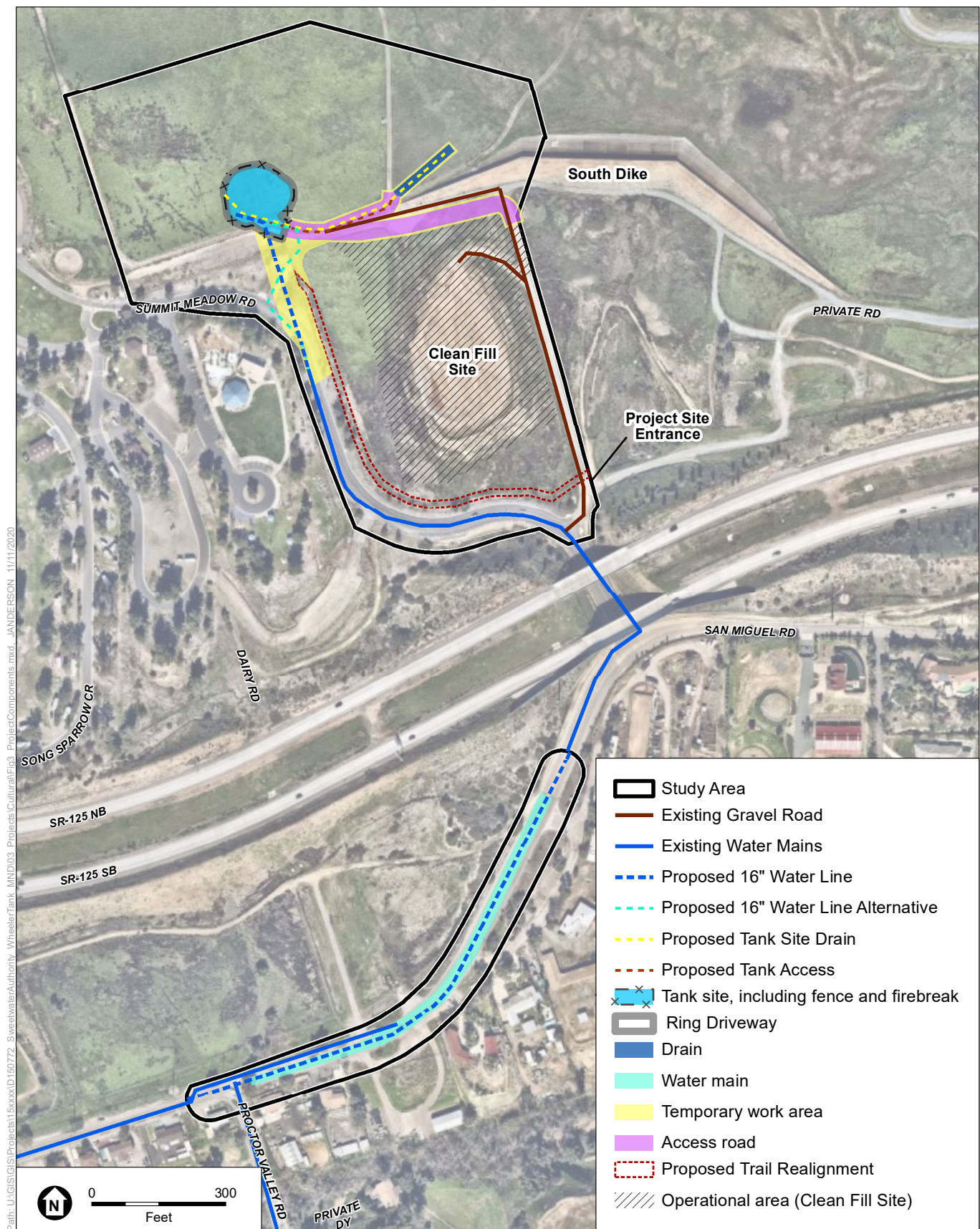


SOURCE: ESRI

Central Wheeler Tank and System Improvements Project

Figure 1
Regional Location





SOURCE: Digital Globe 2017; ESA 2018; Sweetwater Authority 2018

Central-Wheeler Tank and System Improvement

Figure 3
Project Components

Setting

Natural Setting

The Study Area is located between the coastal plain and the western slopes of the foothills of the Peninsular Ranges, about 7 miles from San Diego Bay. The Study Area is mapped as Eocene non-marine rocks, although Pleistocene-age alluvial deposits appear to be present as well. Most of the Study Area is mapped as Olivenhain cobbly loam, a soil derived from gravelly alluvium. The eastern portion of the Study Area, both along San Miguel Road and within the main Study Area to the north, is mapped as Diablo clay. Both the Olivenhain cobbly loam and Diablo clay are well-drained soils common to slopes of 9-30 percent and are commonly shallow due to erosional activity in the downslope direction.

The Study Area is located in a minimally developed area south of Sweetwater Reservoir, with components both north and south of State Route (SR) 125. To the east, the landscape becomes more mountainous and is largely undeveloped, with San Miguel Mountain roughly 6.5 miles to the east. The land immediately to the north, between the Study Area and Sweetwater Reservoir, is generally undeveloped, though it has been impacted by the reservoir itself and by reservoir operations. To the south and west are heavily developed, urban neighborhoods. The Study Area itself encompasses an elevated knoll in the northwestern portion, with lower elevations to the south and east.

Prehistoric Setting

The chronology of coastal southern California is typically divided into three general time periods: the Early Holocene (11,000 to 8,000 Before Present [B.P.]), the Middle Holocene (8,000 to 4,000 B.P.), and the Late Holocene (4,000 B.P. to A.D. 1769). Within this timeframe, the archaeology of southern California is generally described in terms of cultural “complexes”. A complex is a specific archaeological manifestation of a general mode of life, characterized archaeologically by particular technologies, artifacts, economic systems, trade relationships, burial practices, and other aspects of culture.

Early Holocene (11,000 to 8,000 B.P.)

While it is not certain when humans first came to California, their presence in southern California by about 11,000 B.P. has been well documented. At Daisy Cave, on San Miguel Island, cultural materials have been radiocarbon dated to between 11,100 and 10,950 years B.P. (Byrd and Raab 2007). On the mainland, radiocarbon evidence confirms occupation of the Orange County and San Diego County coast by about 9,000 B.P., primarily in lagoon and river valley locations (Gallegos 2002). In western Riverside County, few Early Holocene sites are known to exist. One exception is site CA-RIV-2798, which contains deposits dating to as early as 8,580 cal. B.P. (Grenda 1997). During the Early Holocene, the climate of southern California became warmer and more arid and the human population, residing mainly in coastal or inland desert areas, began exploiting a wider range of plant and animal resources (Byrd and Raab 2007).

The primary Early Holocene cultural complex in the coastal and mountain regions of southern California was the San Dieguito Complex, occurring between approximately 10,000 and 8,000 B.P. The people of the San Dieguito Complex inhabited the chaparral zones of southwestern California, exploiting the plant and animal resources of these ecological zones (Warren 1967). Leaf-shaped and large-stemmed projectile points, scraping tools, and crescentics are typical of San Dieguito Complex material culture.

Middle Holocene (8,000 to 4,000 B.P.)

During the Middle Holocene, there is evidence for the processing of acorns for food and a shift toward a more generalized economy in coastal and inland southern California. The processing of plant foods, particularly acorns, increased, a wider variety of animals were hunted, and trade with neighboring regions intensified (Byrd and Raab 2007).

The Middle Holocene La Jolla Complex (8,000–4,000 B.P.) is essentially a continuation of the San Dieguito Complex. La Jolla groups lived in chaparral zones or along the coast, often migrating between the two. Coastal settlement focused around the bays and estuaries of coastal Orange and San Diego Counties. La Jolla peoples produced large, coarse stone tools, but also produced well-made projectile points and milling slabs. The La Jolla Complex represents a period of population growth and increasing social complexity, and it was also during this time period that the first evidence of the exploitation of marine resources and the grinding of seeds for flour, as indicated by the abundance of millings in the archaeological record, appears (Byrd and Raab 2007; Horne and McDougall 2003).

Contemporary with the La Jolla Complex, the Pauma Complex has been defined at inland sites in San Diego and Riverside Counties (True 1958). The Pauma Complex is similar in technology to the La Jolla Complex; however, evidence of coastal subsistence is absent from the Pauma Complex sites (Moratto 1984). The Pauma and La Jolla Complexes may either be indicative of separate inland and coastal groups with similar subsistence and technological adaptations, or, alternatively, may represent inland and coastal phases of one group's seasonal rounds. The latter hypothesis is supported by the lack of hidden and deeply buried artifacts at Pauma sites, indicating that these sites may have been temporary camps for resource gathering and processing.

Late Holocene (4,000 B.P. to A.D. 1769)

During the Late Holocene, native populations of southern California were becoming less mobile and populations began to gather in small sedentary villages with satellite resource-gathering camps (Byrd and Raab 2007). Evidence indicates that the overexploitation of larger, high-ranked food resources may have led to a shift in subsistence towards a focus on acquiring greater amounts of smaller resources, such as shellfish and small-seeded plants (Byrd and Raab 2007).

Around 1,000 B.P., an episode of sustained drought, known as the Medieval Climatic Anomaly (MCA), occurred. While the effects of this environmental change on prehistoric populations are still being debated, it did likely lead to changes in subsistence strategies in order to deal with the substantial stress on resources (Jones and Schwitalla 2008). In coastal southern California, beginning before the MCA but possibly accelerated by it, conditions became drier and many

lagoons had been transformed into saltwater marshes. Because of this, populations abandoned coastal mesa and ridge tops to settle nearer to permanent freshwater resources (Gallegos 2002).

Although the intensity of trade had already been increasing, it reached its zenith in the Late Holocene, with asphaltum (tar), seashells and steatite being traded from southern California to the Great Basin. Major technological changes appeared as well, particularly with the advent of the bow and arrow, which largely replaced the use of the dart and atlatl (Byrd and Raab 2007). Small projectile points, ceramics, including Tizon brownware pottery, and obsidian from Obsidian Butte (Imperial County), are all representative artifacts of the Late Holocene.

The San Luis Rey culture (divided into San Luis Rey I [AD 1400 to 1750] and San Luis Rey II [AD 1750 to 1850]) represented the Late Period in southwestern Riverside County and northern San Diego County (Moratto 1984). San Luis Rey I village sites contain manos (hand stones), metates (grinding slabs), bedrock mortars, shell artifacts, and triangular arrow points. In addition to these features, San Luis Rey II sites are characterized by the presence of pottery, pictographs, and the cremation of the dead (Moratto 1984).

San Luis Rey settlement patterns are typified by seasonally occupied lowland villages located in proximity to water sources, and highland villages occupied in the late summer and fall for acorn collection (True and Waugh 1982). However, settlement patterns within southwestern Riverside County are less well known. The available information, stemming primarily from survey data, indicates that four primary site types existed within the region during the Late Period: field camps, resource procurement locations, residential bases, and villages (Mason 1999). Resource procurement locations and field camps, the most common site types, contain a limited assemblage of artifacts and subsistence remains, primarily lithic debitage, some tools, fire affected rock, and small amounts of animal bones and charred seeds and nuts. This indicates that these types of sites were used primarily for focused activities and short-term occupancy.

Villages and residential bases, on the other hand, show evidence for long-term occupation by large groups of people. Villages were occupied year-round, while residential bases were occupied seasonally. Artifacts and features found at both villages and residential bases, including large amounts of faunal and botanical remains, numerous high-quality tools, fire-affected rock, and anthrosols, indicate a wide range of activities (Mason 1999). Bedrock mortars point to the processing of seeds and acorns, and ceremonial activities are evidenced by the presence of pictographs, petroglyphs, and cupules within village sites.

Ethnographic Setting

The greater San Diego area was inhabited by a group of people known generally as the Kumeyaay. The Kumeyaay are one of many local Native groups collectively referred to as the Diegueño, specifically representing populations occupying an area that encompassed roughly southern present-day San Diego County, southern Imperial County, and northern Baja California (Kroeber 1925). The Kumeyaay language belonged to the Yuman language family, Hokan stock (Luomala 1978). Subsistence strategy for the Kumeyaay involved small-game hunting and resource gathering, with a noted reliance upon marine resources near San Diego Bay and along the Pacific Coast. Inland Kumeyaay populations relied primarily upon the exploitation of small

game animals including insects, fish, birds, dove, rabbits, and squirrels, as well as abundantly available vegetal resources such as many varieties of seeds, principally the acorn, cacti, and herbaceous plants. Studies indicate that the Kumeyaay divided their seasonal subsistence between the mountain and the desert ecological zones. With the seasons, the Kumeyaay moved in small bands from one productive area to another to ensure a near constant food supply (Luomala 1978).

In 1769, the Mission San Diego de Alcalá was founded and Kumeyaay were missionized and eventually moved onto reservations (Luomala 1978). Today, Kumeyaay tribal members within the United States are divided into twelve federally recognized bands: Barona, Campo, Ewiiapaayp, Inaja-Cosmit, Jamul, La Posta, Manzanita, Mesa Grande, San Pasqual, Santa Ysabel, Sycuan, and Viejas. An additional San Diego County band, the Kwaaymii Laguna Band of Indians, is not currently federally recognized. Several more Kumeyaay communities are present in Mexico.

Historical Setting

Spanish Period (A.D. 1769-1821)

Although Spanish explorers made brief visits the region in 1542 and 1602, sustained contact with Europeans did not commence until the onset of the Spanish Period. In 1769 Gaspar de Portola led an expedition from San Diego to the San Francisco Bay (McCawley 1996). This was followed in 1776 by the expedition of Father Francisco Garcés (Johnson and Earle 1990). In the late 18th century, the Spanish began establishing missions in California and forcibly relocating and converting native peoples. The nearest mission to the proposed Project was Mission San Diego de Alcalá, founded in 1769 by Father Junipero Serra.

With the establishment of Mission San Diego de Alcalá, the Spanish began forcibly relocating and converting the regional Kumeyaay population. Throughout California, the Mission system took a toll on the native populations through disease and hard labor; by 1900, the Native Californian population had declined by over 90 percent (Cook 1978). Furthermore, native economies were disrupted, trade routes were interrupted, and native ways of life were significantly altered by the Mission system.

In an effort to promote Spanish settlement of Alta California, Spain granted several large land concessions from 1784 to 1821. At this time, unless certain requirements were met, Spain retained title to the land (State Lands Commission 1982)

Mexican Period (A.D. 1821-1848)

The Mexican Period began when Mexico won its independence from Spain in 1821. Mexico continued to promote settlement of California with the issuance of land grants. In 1833, Mexico began the process of secularizing the missions, reclaiming the majority of mission lands and redistributing them as land grants. According to the terms of the Secularization Law of 1833 and Regulations of 1834, at least a portion of the lands would be returned to the Native populations, but this did not always occur (Milliken et al. 2009).

Many ranchos continued to be used for cattle grazing by settlers during the Mexican Period. Hides and tallow from cattle became a major export for Californios (native Hispanic

Californians), many of whom became wealthy and prominent members of society. San Diego became a major depot for the hide and tallow trade (Mills 1967). Ships from Boston brought guns, powder, hardware, toilet articles, woolens, cotton goods, boots, shoes and other manufactured items to trade for the valuable hides.

American Period (A.D. 1848-present)

In 1846, the Mexican-American War broke out. Mexican forces were eventually defeated in 1847 and Mexico ceded California to the United States as part of the Treaty of Guadalupe Hidalgo in 1848. California officially became one of the United States in 1850. While the treaty recognized the right of Mexican citizens to retain ownership of land granted to them by Spanish or Mexican authorities, the claimant was required to prove their right to the land before a patent was given. The process was lengthy, and generally resulted in the claimant losing at least a portion of their land to attorney's fees and other costs associated with proving ownership (Starr 2007).

When the discovery of gold in northern California was announced in 1848, a huge influx of people from other parts of North America flooded into California. The increased population provided an additional outlet for the Californios' cattle. As demand increased, the price of beef skyrocketed and Californios reaped the benefits. However, a devastating flood in 1861, followed by droughts in 1862 and 1864, led to a rapid decline of the cattle industry; over 70 percent of cattle perished during these droughts (McWilliams 1946; Dinkelspiel 2008). This event, coupled with the burden of proving ownership of their lands, caused many Californios to lose their lands during this period (McWilliams 1946). Former ranchos were subsequently subdivided and sold for agriculture and residential settlement.

The first transcontinental railroad was completed in 1869, connecting San Francisco with the eastern United States. Newcomers poured into northern California. Southern California experienced a trickle-down effect, as many of these newcomers made their way south. The Southern Pacific Railroad extended this line from San Francisco to Los Angeles in 1876. The second transcontinental line, the Santa Fe, was completed in 1886 and caused a fare war, driving fares to an unprecedented low. In 1880, construction began on the California Southern Railroad, which would eventually connect San Diego with the Santa Fe railroad line through the Cajon Pass, by way of Temecula (Brigandi 2010; Lowell 1985). Settlers flooded into the region and the demand for real estate skyrocketed. The subdivision of the large ranchos took place during this time (Meyer 1981; McWilliams 1946).

Sweetwater Dam and Reservoir

The Sweetwater Dam and associated railroad (Sweetwater Branch of the National City & Otay [NC&O] Railroad) and quarries were constructed by the San Diego Land and Town Company (Company) during the 1880s. The Company was owned by Boston-based investors associated with the Atchison, Topeka & Santa Fe Railroad and was instrumental in the development of western San Diego County during the 19th century (Mikesell 1998).

The Company originally hired Frank E. Brown in 1886, who had also constructed the Bear Valley Dam in San Bernardino and who had been a founder of the city of Redlands, to oversee the design and construction of the dam. However, Brown was fired in 1887 after only a few months

of construction and was replaced by James Schuyler, who completed the dam in 1888 (Mikesell 1998).

The 1888 dam consisted of a thin masonry arch structure. At the time of its construction, the dam was the largest of its type in the world and became a tourist attraction. A special station on the NC&O Railroad was established to handle the sightseers. The masonry arch dam soon proved inadequate, however, and in 1895 a severe storm caused the reservoir water to top the dam. The dam was repaired, but in 1911 was enlarged and transformed from an arch structure to a concrete gravity structure. The original masonry dam was encased in concrete and widened at its base and crest. However, in 1916 one of the greatest storms in San Diego County history caused water to again overtop the dam, creating a massive hole in the north abutment. Despite the damage to the dam and the severe flooding that followed, the dam did not fail. In 1917, the dam was repaired, abutments modified, and a new, higher-capacity spillway and stilling pool at the base of the dam were added. Although other alterations were made in 1940, since its 1917 modification the dam has only been subject to routine maintenance and has changed little in appearance (Mikesell 1998). The 1911 and 1917 modifications were successful and transformed the dam into a reliable and important supplier of water to the region.

Regulatory Framework

Numerous laws and regulations require federal, state, and local agencies to consider the effects a project may have on cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the various agencies proposing the action, and prescribe the relationship among other involved agencies.

State

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at *Public Resources Code (PRC) Section 21000 et seq.* CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or unique archaeological resources. Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

The *CEQA Guidelines* (Title 14 California Code of Regulations [CCR] Section 15064.5) recognize that historical resources include: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (California Register); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a

resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the *CEQA Guidelines* apply. If an archaeological site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, then the site may be treated in accordance with the provisions of Section 21083, which is as a unique archaeological resource. As defined in Section 21083.2 of CEQA a “unique” archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required. The *CEQA Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (*CEQA Guidelines* Section 15064.5(c)(4)).

A significant effect under CEQA would occur if a project results in a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* Section 15064.5(a). Substantial adverse change is defined as “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired” (*CEQA Guidelines* Section 15064.5(b)(1)). According to *CEQA Guidelines* Section 15064.5(b)(2), the significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that:

- A. Convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
- B. Account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

- C. Convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a Lead Agency for purposes of CEQA.

In general, a project that complies with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Standards) (U.S. Department of Interior, 2002) is considered to have mitigated its impacts to historical resources to a less-than-significant level (CEQA Guidelines Section 15064.5(b)(3)).

California Register of Historical Resources

The California Register is “an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change” (PRC Section 5024.1[a]). The criteria for eligibility for the California Register are based upon National Register criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a prehistoric or historic-period property must be significant at the local, state, and/or federal level under one or more of the following four criteria:

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

A resource eligible for the California Register must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally determined eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and,
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

- Other resources that may be nominated to the California Register include:
- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register);
- Individual historical resources;
- Historical resources contributing to historic districts; and,
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 requires that in the event human remains are discovered, the County Coroner be contacted to determine the nature of the remains. In the event the remains are determined to be Native American in origin, the Coroner is required to contact the California Native American Heritage Commission (NAHC) within 24 hours to relinquish jurisdiction.

California Public Resources Code Section 5097.98

California PRC Section 5097.98, as amended by Assembly Bill 2641, provides procedures in the event human remains of Native American origin are discovered during project implementation. PRC Section 5097.98 requires that no further disturbances occur in the immediate vicinity of the discovery, that the discovery is adequately protected according to generally accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. PRC Section 5097.98 further requires the NAHC, upon notification by a County Coroner, designate and notify a Most Likely Descendant (MLD) regarding the discovery of Native American human remains. Once the MLD has been granted access to the site by the landowner and inspected the discovery, the MLD then has 48 hours to provide recommendations to the landowner for the treatment of the human remains and any associated grave goods.

In the event that no descendant is identified, or the descendant fails to make a recommendation for disposition, or if the land owner rejects the recommendation of the descendant, the landowner may, with appropriate dignity, reinter the remains and burial items on the property in a location that will not be subject to further disturbance.

Assembly Bill 52 and Related Public Resources Code Sections

Assembly Bill (AB) 52 was approved by California State Governor Edmund Gerry “Jerry” Brown, Jr. on September 25, 2014. The act amended California PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation (NOP) or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as tribal cultural resources. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as “sites, features,

places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the CEQA Guidelines, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a lead agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency provide formal notification to the designated contact, or a tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency’s formal notification and the lead agency must begin consultation within 30 days of receiving the tribe’s request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the project’s impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to Section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage in the consultation process, or if the lead agency has complied with Section 21080.3.1(d) and the California Native American tribe has failed to request consultation within 30 days, the lead agency may certify an EIR or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. As of the date of this Cultural Resources Assessment Report, the Authority has not received a request from a California Native American tribe pursuant to AB 52 and related PRC sections discussed above.

Archival Research

SCIC Records Search

A records search for the Project was conducted on December 19, 2018 at the California Historical Resources Information System (CHRIS) South Coastal Information Center (SCIC) housed at San Diego State University. The records search included a review of all recorded archaeological resources, historic architectural resources, and previous studies within a 0.5-mile radius of the Study Area.

Previous Cultural Resources Investigations

The records search indicates that 34 cultural resources studies have been conducted within a 0.5-mile radius of the Study Area (**Table 1**). Of these 34 studies, 14 have included at least part of the Study Area. As a result, the entirety of the 0.5-mile records search radius, including the Study Area itself, has been included in previous cultural resources studies.

TABLE 1
PREVIOUS CULTURAL RESOURCES INVESTIGATIONS

| Author | SCIC# (SD-) | Title | Year |
|--------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| *Baksh, Michael | 02795 | Cultural Resource Survey for San Diego Water Authority Pipeline 4E11, San Diego County. | 1991 |
| Beddow, Donna | 09387 | Negative Cultural Resources Survey Report for Madrid Ranch Estates TM5363/Log No. 04-19-006 APN 585-112-08. | 2005 |
| Byrd, Brian | 07401 | Phase II Archaeological Evaluation of Prehistoric Site CA-SDI-11453, Sunnyside, San Diego County, California. | 1994 |
| Caltrans | 06776 | Archaeological Survey Report for a Realignment Project on Route 94 at Lyons Valley Road 11-SD-944 P.M. 19.2 - 19.5. | 1981 |
| *Caltrans | 07379 | Second Supplemental Historic Property Survey Report: Final Preferred Alternative State Route 125 South. | 1998 |
| *Caltrans | 07659 | Archaeological Survey Report for Proposed State Route 125 from State Route 905 (Near Second Border Crossing) to State Route 54 (Near Sweetwater Reservoir; 11-SD-125 P.M.0.0/11.2. | 1990 |
| Carrico, Richard | 04310 | Archaeological Survey Report for the Bonita Road Bridge Replacement Project County of San Diego, California. | 1995 |
| *Carrico, Richard, Susan H. Carrico, Kathleen A. Crawford, and S. Kathleen Flannigan | 06425 | Historic Resources Inventory Sweetwater Valley. | 1990 |
| *Chace, Paul G. | 00430 | An Archaeological Survey, Del Dios Mano. | 1977 |
| *County of San Diego | 02078 | Draft Environmental Impact Report for Sweetwater Regional Park Revised Schematic Master Plan and Major Use Permit. | 1989 |
| *County of San Diego | 02132 | Draft Environmental Impact Report for Sweetwater Regional Park Bonita, California. | 1979 |
| *County of San Diego Department of Planning & Land Use | 02077 | Draft Environmental Impact Report Sweetwater Community Plan Update GPA 88-03. | 1988 |

| Author | SCIC# (SD-) | Title | Year |
|----------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| *Downs, Lauren | 17389 | Cultural resources Testing Results for the Proposed Bike Skills Park, Sweetwater Regional Park, San Diego County, California. | 2018 |
| *Fink, Gary | 00838 | Sweetwater Regional Park Bonita, California A Cultural Resource Assessment Project No. UJ0234. | 1978 |
| Gallegos, Dennis and Richard Carrico | 01030 | Cultural Resource Survey for Eastlake Otay Water District Improvements Chula Vista, California | 1985 |
| Gregg, Susan | 08660 | Archaeology Survey and Report for Rancho Bonita Estates. | 1978 |
| Gross, G. Timothy | 13845 | Archaeological Survey of the Proposed Chart House Expansion Area La Jolla, California with an Addendum: Testing Results. | 1999 |
| Hector, Susan | 01863 | Archaeological Investigations at Bonita Meadows San Diego, California. | 1984 |
| Hirsch, Jennifer | 09319 | Documentation of the Powder House at Sweetwater Dam San Diego, California. | 2004 |
| McDonald, Meg and Drew Palette | 03771 | Phase II Evaluation of Ten Prehistoric Archaeological Sites (CA-SDI-9185, -9256, -11,454, -11,455, -12,912, -12,913, -12,914, -12,915, -12,916, -12,917) in the Sunnyside Area, San Diego County, California. | 1994 |
| Mikesell, Stephen D. | 05486 | Historic Resources Evaluation Report Sweetwater Dam NC&O Sweetwater Branch Sweetwater Quarries 11-SD-125P.M0.0/9.6 &P.M 9.6/11.2. | 1999 |
| MSA, Inc. | 08665 | Focused Draft Environmental Impact Report GPA 80-02 Sweetwater No. 1- Mobile Home Park. | 1980 |
| Recon | 04971 | Draft EIR for Bonita Meadows Estates County of San Diego. | 1983 |
| Robbins-Wade, Mary | 07089 | San Miguel Point, Sweetwater Reservoir Recreation Area. | 2000 |
| Robbins-Wade, Mary | 09485 | Archaeological Survey, Sweetwater Reservoir Fencing (Affinis Job No. 983). | 1993 |
| *Rosen, Martin | 01364 | Archaeological Survey Report for Proposed State Route 125 from State Route 905 (Near the Second Border Crossing) to State Route 54 (Near the Sweetwater Reservoir), San Diego County, California. | 1990 |
| *Rosen, Martin | 10070 | Historic Property Survey Report for State Route 125-South Project Trails, Utilities, Campground Improvements and Other Project Betterments, San Diego County, California. | 2006 |
| Sinead, Nighabhlain | 07833 | Southwestern College Cultural Resources Survey. | 2000 |
| Tennesen, Kristin | 15227 | ETS#24738, Cultural Resources Monitoring for the Intrusive Pole Inspections, OLYM, PROC, TCYN Project, San Diego County, California (HDR #206666) | 2013 |
| *TerraMar International Services, Inc. | 01543 | Results of an Archaeological Survey of an Area Around the Sweetwater Reservoir. | n.d. |
| Wade, Sue A. | 01582 | Cultural Resources Survey of the GTC Project Area, San Diego County. | 1985 |
| *Wade, Sue | 07292 | Test Excavations at Three Sites within the SR-125 Proposed Alignment. | 1988 |
| Westec | 04642 | Bonita Meadows Estates Draft Environmental Impact Report. | 1982 |
| Wlodarski, Robert J. | 10587 | Wireless Facilities Inc. (WFI) Proposed Call Site SS-120-01 (Sweetwater Regional Park) Located at 3218 Summit Meadow Road, Bonita, California 91902. | 2007 |

*Indicates investigation overlaps study area

Previously Recorded Cultural Resources

The records search results indicate that eight cultural resources have been previously recorded within a 0.5-mile radius of the Study Area (**Table 2**). All eight resources are prehistoric archaeological sites. Of the eight resources, one (P-37-005695) is located partially within the Study Area and is described in detail below.

TABLE 2
PREVIOUSLY RECORDED CULTURAL RESOURCES

| Primary # (P-37-) | Permanent Trinomial (CA-SDI-) | Other Identifier | Description | Date Recorded | Eligibility Status | Distance from Study Area |
|----------------------|-------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------|--------------------------------|
| 004486 | 4486 | - | Prehistoric archaeological site consisting of a house pit, possible hearth, and a lithic scatter. | 1976 | Not evaluated | 0.25 miles |
| 004487 | 4487 | - | Prehistoric archaeological site consisting of a possible house pit and lithic scatter. | 1976 | Determined Ineligible (6Y2) | 0.25 miles |
| 005695 | 5695 | CE #136 | Prehistoric archaeological site consisting of two shell fragments and a lithic and groundstone scatter. | 1978 | Southern portion recommended not eligible | Within |
| 006842 | 6842 | CE #206 | Prehistoric archaeological site (likely a quarry site) consisting of a lithic scatter. | 1978 | Determined Ineligible (6Y2) | 0.48 miles |
| 009842 | 9842 | W1926 | Prehistoric archaeological site consisting of a lithic and groundstone scatter. | 1984 | California and National Register listed | 0.48 miles |
| 011452 | 11452 | 125-South #1 | Prehistoric archaeological site consisting of a lithic and groundstone scatter. | 1989 | Determined Ineligible (6Y2) | 0.35 miles |
| 011453 | 11453 | 125-South #2 | Prehistoric archaeological site consisting of a lithic and groundstone scatter. | 1989 | Determined Ineligible (6Y2) | 0.35 miles |
| 012917 | 12917 | RSM #18 | Prehistoric archaeological site consisting of a sparse lithic scatter. | 1992 | Not evaluated | 0.45 miles |

Resource Descriptions

P-37-005695 (CA-SDI-5695)

Resource P-37-005695 is a prehistoric archaeological resource originally documented in 1978 by G.R. Fink as a San Dieguito-La Jolla campsite, containing six manos and mano fragments, along with five lithic tools (Fink 1978 in Table 1). The resource was revisited in 1989 by staff from Caltrans District 11 and was described as a “light, diffuse scatter of lithics” (Rosen 1990 in Table 1). At the time, the boundary of the resource was also extended south. Subsequently, in an addendum to the same survey report (Rosen 1992, as contained in Rosen 1990 in Table 1), the site is noted as destroyed by the County campground facility.

In 2018, AECOM tested approximately 2.4 acres of the southwestern portion of the resource (Downs 2018 in Table 1). The testing program involved the excavation of 25 shovel test pits and resulted in the recovery of only two shell fragments. Given the near absence of surface and subsurface cultural materials, the report concludes that the tested portion of P-37-005695 likely is not eligible for the California Register, but also states that untested portions of the site could contain higher densities of cultural material.

Resource P-37-005696 is mapped as slightly overlapping two project components including. The portion of the site that overlaps the southern portion of the Study Area was recommended ineligible for the California Register by AECOM as part of their 2018 testing program.

Sacred Lands File Search

The NAHC maintains a confidential SLF which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on January 9, 2019 to request a search of the SLF. The NAHC responded to the request in a letter dated January 11, 2019. The results of the SLF search conducted by the NAHC was positive, indicating that sites on file are located within the vicinity of the Study Area (**Appendix B**). The letter did not provide the locations or details of the resources identified within area, but recommended that the Kwaaymii Laguna Band of Mission Indians and the Kumeyaay Cultural Repatriation Committee be consulted regarding the resources. The letter also provided a list of local Native American contacts for the Project. The Authority sent outreach letters to the Native American contacts identified by the NAHC. The letters, dated August 30, 2019, described the Project, summarized the cultural resource studies conducted to date (as summarized in this report), and requested any information the tribes might wish to share. In addition, ESA staff reached out to the Kumeyaay Cultural Repatriation Committee by phone on August 30, 2019.

As a result of the outreach, one response was received. By letter dated September 24, 2019, Mr. Ray Teran of the Viejas Band of Kumeyaay Indians (Viejas) indicated that the Study Area has cultural significance or ties to Viejas, and requested that a Kumeyaay Cultural Monitor be on site for ground disturbing activity.

Historic Maps and Aerial Photographs

Historic maps and aerial photographs were examined to provide historical information about land uses of the Study Area and to contribute to an assessment of the Study Area's archaeological sensitivity. Maps and photos were viewed on www.historicaerials.com. The earliest aerial photo, from 1953, shows the current alignment of San Miguel Road, as well as a straighter alignment to Summit Meadow Road, where the road extends directly southward from the north-south stretch along the Study Area's northwestern most boundary. The reservoir is visible to the north, and the broader area is generally undeveloped, but covered with agricultural fields. This includes most of the Study Area, which also includes numerous dirt roads that generally follow the alignment of current roads. The dike that extends into the eastern side of the Study Area is visible on the earliest photo, as is evidence of vegetation clearing or grading. These impacts to the Study Area are likely related to the construction and operation of the reservoir. There is a structure the west of the Study Area, and what may be sparse development south of San Miguel Road. The situation remains largely the same through the 1980s, aside from increasing development along the south side of San Miguel Road and the addition of a few buildings to the west of the Study Area. The park campground facilities at the southwestern end of the Study Area, including the realigned Summit Meadow Road, first appear in a 1994 photo. SR 125 first appears in 2009. The topographic maps largely depict what is seen in the aerial photos. San Miguel Road is present on the earliest 1904 map. Following that, growth is generally slow, and focused south of the San

Miguel Road. The camping facilities and newly constructed roads show up on the 2001 map, and SR 125 on the 2012 map.

In sum, the historic map and aerial photograph review indicates that, aside from development south of San Miguel Road, establishment of the camping facility to the west of the Study Area, and the addition of SR 125, the vicinity of the Study Area has shown essentially the same degree of disturbance throughout. While never developed with standing structures, the Study Area in the vicinity of the proposed tank has been impacted by dirt roads and signs of grading and vegetation clearing, most likely related to other projects, including recreational trails and the shoreline fishing program, but also operation of the reservoir. With few exceptions, including the large cleared area in the center of the Study Area, these alterations are generally the same today as they were in the earliest photo from 1953. Regardless, it is clear from the aerial photo review that the Study Area has been previously impacted to varying degrees, including grading, vegetation removal, construction and use of dirt roads and, though not visible on the aerial imagery, installation of existing pipelines and subsurface infrastructure.

Cultural Resources Survey

Methods

On January 15, 2019, ESA cultural resources specialists Michael Vader, B.A. and Joel Aspeytia, B.A. conducted a cultural resources survey of the Study Area. The survey was aimed at identifying archaeological and historic architectural resources within the Study Area. The entirety of the Study Area's northern portion, where the tank and associated pipelines and access road would be constructed, was subject to systematic pedestrian survey using transect spaced at no more than 15-meter (approx. 50-foot) intervals. The southern linear portion of the Study Area on San Miguel Road was subject to an opportunistic survey wherein portions of the road's shoulders with visible ground surface were inspected.

Results

Much of the Study Area's northern portion was covered in ankle to knee high grasses which reduced ground surface visibility to 0-5 percent throughout much of the Study Area. The only areas of visible ground surface were the graded dirt access roads that bisect the center and edges of the Study Area, and the Clean Fill Site area. Ground surface visibility within these areas ranged from 50-100 percent. The clean fill area is a large stock pile of clean fill in the south-central portion of the Study Area and it contains no intact native sediments. Aside from this area, observed soils consisted primary of brown silty clay with large rhyolitic, metavolcanic, and quartzite cobbles noted eroding down slope. The portion of the Study Area on San Miguel Road consists of residential development on its southern side; however, the road's northern shoulder consists of visible ground surface which was inspected for the presence of cultural resources.

Figures 4 and 5 shows survey conditions within the Study Area.

Confidential Figure 6 in **Appendix C** shows the location of the resource as documented at the SCIC. P-37-005695, described as a large but sparse scatter of lithic and groundstone,

encompasses a large area and its recorded boundary overlaps the Study Area, with its eastern margin slightly overlapping the western margin of the Proposed tank location.

As a result of the survey, eight artifacts associated with previously recorded archaeological site P-37-005695 were identified within the dirt roads in of the Study Area where the ground surface was most visible. Artifacts identified during the survey included fine grain metavolcanic (FGMV) primary and secondary flakes, FGMV debitage, one possible FGMV scraper, one FGMV edge-modified primary flake, and one rhyolitic basin metate. Given the abundance of naturally occurring rhyolitic, metavolcanic, and quartzite cobbles eroding downslope throughout the Study Area, the observed lithic debitage may represent the opportunistic assaying or testing of the naturally occurring cobbles for use as toolstone. Given that many of the pieces of debitage identified retain cortex, it appears, based on this small sample, that early stages of lithic reduction were carried out.

While found within the Study Area, none of the artifacts was found in an area subject to disturbance from the water tank or other Project components. However, given the poor ground surface visibility throughout much of the Study Area, it could not be conclusively determined whether the site's surface manifestation overlaps the proposed tank location. The artifacts were photographed and mapped using a GPS unit capable of sub-meter accuracy. A California Department of Parks and Recreation (DPR) 523 site record update was prepared for P-37-005695 (**Confidential Appendix D**). No additional archaeological or built environment resources were identified as a result of the survey.



Figure 4a. Northwest portion of Project site showing vegetation cover, view to W



Figure 4b. Northeast portion of Project site showing dike, view to E



Figure 5a. Southern portion of Project site showing vegetation cover, view to ESE



Figure 5b. Area of pipeline alignment along San Miguel Road, view to NE

Conclusion and Recommendations

The SCIC records search identified one resource, prehistoric archaeological site P-37-005695, within the Study Area. This was confirmed through the field survey. While the resource overlaps the Project site, most of it is documented to the west and outside of the Study Area, and no cultural materials were found within the location of the proposed tank. As discussed previously, P-37-005695 was originally described by Fink in 1978 as a San Dieguito-La Jolla campsite consisting of lithic and groundstone artifacts. Even then, the site record notes that the site has been affected by agricultural plowing. This was confirmed through an examination of aerial photos, which show this agricultural activity, as well as various other impacts such as grading and construction of dirt roads, likely related to the agricultural activities or operation of the reservoir. The site was updated and expanded to the west and south in 1989, and described as a large but sparse lithic scatter with a small amount of shell, and a possible though not confirmed subsurface component (Rosen 1990 in Table 1). The site record update notes that the site had been impacted by a house, extensive grading, construction of dirt roads, and dairy farm operations. Since the 1989 update, the resource has been severely impacted by the construction of a County camping facility and a State Route, and the realignment of various roads. Indeed, an addendum to the 1990 report (Rosen 1992, as contained in Rosen 1990 in Table 1) notes that the site has been destroyed in the vicinity of the camp ground improvements. Most recently, test excavation in the southern portion of the site (Downs 2018 in Table 1), including a small area adjacent to a portion of the current Study Area, failed to identify a subsurface component. The testing study recommended the southern portion of the site as ineligible for listing in the California Register.

Resource P-37-005695 overlaps two Project components within the Study Area. No cultural materials were found in southern portion of the Study Area during the current survey and, as noted, previous archaeological testing failed to find a subsurface archaeological deposit. Given this, Project-related activities in this area are not expected to have an impact on P-37-005695.

The portion of P-37-005695 in the northern part of the Study Area has seen less development than other portions of P-37-005695, although the area has no doubt been impacted by past agricultural and other activities. In addition, the elevated topography and shallow, cobbly soils of the area indicate that a geological mechanism for burial of archaeological resources is lacking. As such, a subsurface archaeological deposit in this area is highly unlikely. What remains likely constitutes the scattered remnants of the archaeological site, an archaeological site that has largely been destroyed. That said, the current survey did find a sparse scatter of surficial artifacts, indicating that this portion of the site, while heavily disturbed, does remain. Given poor surface visibility during the survey, additional artifacts could be present, and construction of the tank as well as adjacent portions of the proposed water main, tank drain line, and access road, could encounter archaeological materials.

While it is unlikely that a significant archaeological deposit will be encountered in this area during Project-related construction activities, it is possible. Given this, and given the archaeological sensitivity of the Project vicinity, as demonstrated by the records search and the positive SLF search, the following recommendations are provided to ensure that any Project-related impacts to cultural resources are less than significant.

1. Prior to the start of ground-disturbing activities, the Applicant will retain a Qualified Archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior 2008) to carry out all mitigation related to cultural resources. Prior to the start of ground disturbing activities, all construction personnel shall be trained to identify the types of cultural resources that may be encountered during Project implementation. These include both prehistoric and historic period archaeological resources. In addition to cultural resources recognition, the training shall convey procedures to follow in the event of a potential cultural resources discovery, including notification procedures. The training shall be provided by the Qualified Archaeologist or an archaeologist working under their supervision.
2. An archaeological monitor (working under the direct supervision of the Qualified Archaeologist) and a Native American monitor shall observe all project-related ground-disturbing activities including but not limited to brush clearance, vegetation removal, grubbing, and grading. The Qualified Archaeologist, in coordination with the Authority and the Native American monitor(s), may reduce or discontinue monitoring if it is determined that the possibility of encountering buried archaeological deposits is low based on observations of soil stratigraphy or other factors. This may be particularly true for the portion of the project being constructed within San Miguel Rd. Archaeological monitoring shall be conducted by an archaeologist familiar with the types of archaeological resources that could be encountered within the Project.

The Native American monitor shall be from a tribe that is culturally and geographically affiliated with the Kumeyaay tribe. The archaeological and Native American monitors shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of a discovery until the Qualified Archaeologist has evaluated the discovery, consulted with the Authority, and determined appropriate treatment (as prescribed in 3 below). The archaeological monitor shall keep daily logs detailing the types of activities and soils observed, and any discoveries. After monitoring has been completed, the archaeologist shall prepare a monitoring report that details the results of monitoring. The report shall be submitted to the Authority and any Native American groups who request a copy. The Qualified Archaeologist shall also submit a copy of the final report to the California Historic Resources Information System South Coastal Information Center.

3. If cultural resources are encountered during Project implementation, all activity within 50 feet of the find should cease until the find can be evaluated by the Qualified Archaeologist. If the Qualified Archaeologist determines that the resource may be significant, he or she will notify the Authority and develop an appropriate treatment plan for the resource. The Authority shall consult with the Native American monitor or other appropriate Native American representatives in determining appropriate treatment for unearched cultural resources if the resources are prehistoric and Native American in nature. In considering any suggested measures proposed by the archaeologist to mitigate impacts to archaeological resources, the Authority will determine whether avoidance is feasible in light of factors such as the nature of the find, Project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures will be instituted, which could include, among other options,

detailed documentation, or data recovery excavation. Work may proceed on other parts of the Project area while mitigation for cultural resources is being carried out.

If human remains are encountered, all work will halt work in the vicinity (within 100 feet) of the discovery and the San Diego County Coroner will be contacted in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. The Authority will also be notified. If the County Coroner determines that the remains are Native American, the NAHC will be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98 (as amended by AB 2641). The NAHC will designate an MLD for the remains per PRC Section 5097.98. Until the Authority, as the landowner, has conferred with the MLD, the Authority will ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.

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Appendix A

Personnel





Michael R. Bever, PhD, RPA

Senior Cultural Resources Specialist

EDUCATION

PhD, Anthropology,
Southern Methodist
University

MA, Anthropology,
Southern Methodist
University

BA, Anthropology, with
honors, History minor,
University of California,
Davis

24 YEARS OF EXPERIENCE

PROFESSIONAL CERTIFICATIONS

Register of Professional
Archaeologists (RPA),
#16583

County of San Diego
CEQA Consultant List
for Archaeology

Riverside County
Certification List for
Archaeology

Secretary of the Interior
and Caltrans Qualified
as Principal Investigator

Certified in CA and NV
as Principal under BLM
Cultural Resources Use
Permits

40-Hour HAZWOPER
Certification

Dr. Bever has over 24 years of experience in archaeology and cultural resources management. He has worked throughout the western United States, with a focus in California. He has experience and specialized training in project management, business development, and cultural resources practice oversight, and has directed projects involving a wide breadth of resource types in compliance with federal and state laws and regulations. Dr. Bever's experience includes all manner of cultural resources studies and documentation for projects both large and small, and he has presented various cultural resources management training courses in both professional and academic settings.

In addition to work in cultural resources management, Dr. Bever has held tenure-track professorships at the University of Texas at Austin and the University of Nevada, Reno. A published expert in the earliest prehistory of North America, he is well-versed in archaeological research design and all aspects of archaeological field and laboratory research.

Relevant Experience

Montezuma Channel Repair, City of San Diego, CA. *Cultural Resources Manager.*

Dr. Bever oversaw cultural resource studies for the City's channel repair project in Montezuma Channel. The project requires an evaluation for substantial conformance with the City's Master Maintenance Program, derived from a program-level EIR and meeting the City's Historical Resources Guidelines. Cultural resource studies included a records search, field survey, and preparation of an Individual Historic Assessment (IAH).

Santa Margarita Preserve, San Diego County Department of Parks and Recreation, San Diego County, CA. *Cultural Resources Manager.*

Dr. Bever oversaw cultural resources studies for an inventory of this 210-acre preserve in northern San Diego County. Studies involved Native American consultation, extensive archival research into the history of the preserve and vicinity, field survey, resource recording, and reporting. Both a cultural resources technical report and vegetation management plan with a cultural resources element were prepared.

South Santa Fe Road Biomitigation Parcel, County of San Diego Department of Planning and Land Use, San Diego County, CA. *Cultural Resources Manager.*

Dr. Bever managed the cultural resources tasks as part of an environmental assessment for a parcel targeted for wetland remediation as part of a transportation project. The project involved a records search, pedestrian survey, and archival research to document a standing structure on the property. Because much of the project area lies beneath modern fill, backhoe trenching was used to test for the presence of subsurface archaeological materials. Studies were conducted in compliance with Caltrans regulatory requirements.

Sorrento/Los Peñasquitos Waterways Restoration and Improvement Project, City of San Diego, San Diego County, CA. *Cultural Resources Manager.*

The Sorrento/Los Peñasquitos project seeks to restore portions of historic salt

PROFESSIONAL AFFILIATIONS

Society for American
Archaeology

Society for California
Archaeology

SPECIALIZED EXPERIENCE AND TRAINING

Advanced Project
Management, ESA

Project Management
and Advanced Project
Management, Project
Management Institute

Best Practices in
Historic Preservation,
City of San Diego and
California Office of
Historic Preservation

Paleontological Monitor
Training, San Jose State
University

Numerous CEQA, NEPA
and Section 106 training
programs

Effective Presentation
Skills: The Shortlist
Interview Toolbox, The

marsh in the southeastern portion of the Los Peñasquitos Lagoon, along with providing channel enhancements, creation of tidal channels, tidal wetland grading, sediment management, and habitat creation within parcels of land owned and managed by the City of San Diego, State Coastal Conservancy, and California State Parks. Dr. Bever oversaw Phase I cultural resource studies, which consisted of background research, coordination with California State Parks and the Native American Heritage Commission, and an intensive field survey. Over 12 archaeological resources from both the historic and prehistoric periods were documented. The study was conducted in compliance with CEQA and the results will be used to refine project design and implementation.

Pacific Beach Drainage Remediation, City of San Diego, CA. *Cultural Resources Manager.* ESA prepared a grant under the San Diego County Vector Control Program to address continuous ponding of water within an existing drainage ditch that runs adjacent to the Mission Bay High School and along Pacific Beach Drive, and a storm drain outfall in Kendall Frost Marsh (DEH Site #499). ESA was then awarded the planning, design, and permitting of this project, which will include removal of accumulated sediment and extensive vegetation from the storm drain channel where ponded water is observed. ESA designed and permitting the required mitigation measures, which include the restoration of tidal wetlands in Kendall Frost Marsh where fill material will be removed and tidal channels reestablished. Dr. Bever directed a Phase I cultural resources inventory for the project, which involved archival research, paleontological background research, tribal outreach, field survey, and reporting, including preparation of mitigation measures designed to avoid impacts to any resources that might be found in this environmentally sensitive area.

San Ysidro Affordable Housing Project, City of San Diego, CA. *Project and Cultural Resources Manager.* ESA provided technical support services, including cultural resources and air quality/greenhouse gas studies and regulatory guidance, for TTG Environmental's NEPA EA for the San Ysidro Affordable Housing Project. The applicant, National Renaissance Core, proposes to construct affordable housing facilities within the City of San Diego. As a project seeking HUD funding, the environmental documentation must comply with NEPA and, for the cultural resources studies, Section 106 of the National Historic Preservation Act. Dr. Bever led the cultural resources studies, which were prepared in compliance with a Section 106 Programmatic Agreement among the City of San Diego (the San Diego Housing Commission), SHPO, and HUD, for HUD-funded projects within the City. Studies included preliminary documentation of a single built resource on the property.

Vista del Puente Affordable Housing Project, City of San Diego, CA. *Project and Cultural Resources Manager.* ESA provided technical support services, including cultural resources studies and regulatory guidance, for TTG Environmental's NEPA EA for the Vista Del Puente Affordable Housing Project. As a project seeking HUD funding, the environmental documentation must comply with NEPA and, for the cultural resources studies, Section 106 of the National Historic Preservation Act. Dr. Bever led the cultural resources studies, which were prepared in compliance with a Section 106 Programmatic Agreement among the City of San Diego, SHPO, and HUD, for HUD-funded projects within the City. Studies included a Phase I inventory, extended Phase I subsurface testing for archaeological resources, and documentation and evaluation of an existing residence, which was found ineligible for local, state and federal listing. Two archaeological resources, including a prehistoric shell scatter and historic structural remains, were recorded and evaluated as ineligible.



Michael Vader

Senior Associate

EDUCATION

BA, Physical Anthropology,
University of California,
Santa Barbara

M.A., Applied Archaeology (In Progress), California State University San Bernardino

13 YEARS OF EXPERIENCE

PROFESSIONAL AFFILIATIONS

Society for California Archaeology (SCA)

Society for American Archaeology (SAA)

Pacific Coast Archaeological Society (PCAS)

SPECIALIZED EXPERIENCE

Analysis of faunal remains including fish and shellfish species

Archaeological Monitoring

Paleontological Monitoring

Environmental Compliance Monitoring

Human osteology and bioarchaeology

Michael is cultural resources specialist with experience working on survey, data recovery, and monitoring projects. Michael has experience with project management, has led crews on multiple surveys and excavations, and is familiar with environmental compliance documents. He has worked on a variety of energy and water infrastructure projects throughout California, including projects in Riverside, San Diego, Imperial, San Bernardino, Los Angeles, Orange, Santa Barbara, San Luis Obispo, Kern, Fresno, Madera, and Inyo Counties, as well as in Clark County Nevada. Michael regularly works as part of a team, coordinating with field staff and agency leads.

Relevant Experience

Sweetwater Authority, Sweetwater Reservoir Water Main Replacement, San Diego, CA. Archaeological Technician. ESA was retained by Sweetwater Authority to prepare an IS/MND for the replacement of a 36-inch pipeline leading from Sweetwater Dam. Sweetwater Dam was originally constructed in the late 19th century and was subject to upgrades in 1917. ESA conducted a Phase 1 Cultural Resources Assessment including archival research, pedestrian, survey, historical research, Native American outreach, and the preparation of a technical report documenting archaeological and historic-architectural resources that might be impacted by the project. The study concluded features that would be altered by the project were contributing elements to the historic dam would need to be replaced in kind in order to avoid project impacts. Michael assisted in the pedestrian survey for the Phase I Assessment.

MFRO Facility for Agriculture Project, City of Escondido, CA. Archaeologist. The City of Escondido retained ESA to conduct Extended Phase I testing for the Membrane Filtration/Reverse Osmosis (MFRO) Facility for Agriculture Project at the request of the State Water Resources Control Board (SWRCB) to obtain funding from the State Revolving Fund. The project includes construction of an MFRO facility to provide advanced treatment for Title 22 quality reuse water for agricultural use. Michael prepared the Extended Phase I work plan, conducted the Extended Phase I excavations, and completed the Extended Phase I report.

San Diego Gas & Electric's Tie Line (TL) 6975 San Marcos to Escondido 69 kV Project, San Diego County, CA. Archaeologist. San Diego Gas and Electric Company (SDG&E) retained ESA to prepare an Initial Study/Mitigated Negative Declaration. SDG&E proposes to install new overhead single-circuit electric power line structures, to rebuild existing structures from single circuit to double circuit, and to reconduct and re-energize existing conductors. Michael prepared the assisted with the Assembly Bill 52 consultation and prepared the cultural resources and tribal cultural resources ISMND sections for the project.

Bonsall High School Project, Bonsall, San Diego County, CA. Archaeologist. ESA was retained by the Bonsall Unified School District to conduct a Phase I cultural

resources assessment for the Bonsall High School Project in support of an Environmental Impact Report. The project would include the construction of a new high school that would accommodate 1,500 students in grades 9-12 and 50-60 district staff. Michael led the survey and prepared the Cultural Resources Assessment Report for the project.

Pacific Beach Vector Habitat Remediation Project, San Diego, , CA.

Archaeologist. The City of San Diego retained ESA to prepare an ISMND for the Pacific Beach Vector Habitat Remediation Project as part of the County of San Diego Vector Habitat Remediation Program. The City is proposing this area for mitigation under the County Department of Environmental Health Vector Habitat Remediation Program because it is a known mosquito breeding habitat. The purpose of the Project is to decrease favorable habitat for mosquitos, improve the water quality in the Kendall Frost Mission Bay Marsh Reserve, and to create tidal marsh, transitional zone and upland habitat by improving the Noyes Street storm drain outfall which drains and discharges into the Reserve. Michael led the cultural resources survey and prepared the Phase I cultural resources assessment report in support of the ISMND.

El Money Valley Mining and Reclamation Project, San Diego County, CA.

Archaeologist. El Monte Nature Preserve, LLC retained ESA to conduct an updated Phase I cultural resources survey in support of the El Monte Valley Mining and Reclamation Project. The project includes the extraction of 15-million tons of surface mineral over a 15-year period in the El Monte Valley on land that is zoned for extractive use, and the reclamation and restoration of the project area to open space with an open water pond. Michael led the updated survey, prepared the technical memorandum presenting the results of the survey, and assisted in Extended Phase I testing of archaeological site CA-SDI-13592.

Burns & McDonnell, Sunrise Powerlink Transmission Archaeological and Biological Monitoring, Imperial and San Diego Counties, CA. *Environmental Compliance Monitor.* Michael assisted with environmental compliance monitoring services in connection with the construction of a 120-mile long transmission line. SDG&E constructed new 500 and 230 kV transmission lines and a new substation. This project also involved various system modifications to ensure the new lines operate reliable. The project route is approximately 120 miles long from the El Centro area of Imperial County to coastal San Diego County. The CPUC has issued a FEIR/FEIS for the Sunrise project that imposed a number of mitigation and monitoring conditions that needed to be monitored during construction to verify compliance and minimize impact to the environment.

Metropolitan Airpark LLC, Cultural Resources Survey and Assessment, Otay Mesa, San Diego County, CA. *Archaeological Technician.* In support of the EIR, ESA cultural resources staff conducted a records search and cultural resources survey of the approximately 362-acre Metropolitan Airpark. As a result of the field surveys, a total of 19 archaeological resources, including six previously recorded and 13 newly recorded resources were identified. ESA prepared a Cultural Resources Survey and Assessment technical report, the results of which were incorporated into the EIR, which included an impacts analysis and appropriate mitigation measures. Michael assisted with the field surveys as well as the preparation of the technical report prepared for the Federal Aviation Administration.

Appendix B

NAHC Sacred Lands File Search



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
Website: <http://www.nahc.ca.gov>
Twitter: @CA_NAHC



January 11, 2019

Matthew Gonzalez
ESA

VIA Email to: mgonzalez@esassoc.com

RE: Proposed Sweetwater Central-Wheeler Tank and System Improvements Project, San Diego County

Dear Mr. Gonzalez:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please contact the Kwaaymii Laguna Band of Mission Indians on the attached list for more information. Please also contact the Kumeyaay Cultural Repatriation Committee via phone at (760) 803-5694. 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 the NAHC. 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: steven.quinn@nahc.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Steven Quinn".

Steven Quinn
Associate Governmental Program Analyst

Attachment

**Native American Heritage Commission
Native American Contact List
San Diego County
1/11/2019**

Barona Group of the Capitan Grande

Edwin Romero, Chairperson
1095 Barona Road Kumeyaay
Lakeside, CA, 92040
Phone: (619) 443 - 6612
Fax: (619) 443-0681
cloyd@barona-nsn.gov

Campo Band of Mission Indians

Ralph Goff, Chairperson
36190 Church Road, Suite 1 Kumeyaay
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Tribe

Michael Garcia, Vice Chairperson
4054 Willows Road Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net

Ewiiaapaayp Tribe

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wmicklin@leaningrock.net

Iipay Nation of Santa Ysabel

Virgil Perez, Chairperson
P.O. Box 130 Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760) 765 - 0845
Fax: (760) 765-0320

Iipay Nation of Santa Ysabel

Clint Linton, Director of Cultural Resources
P.O. Box 507 Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760) 803 - 5694
cjlinton73@aol.com

Inaja-Cosmit Band of Indians

Rebecca Osuna, Chairperson
2005 S. Escondido Blvd. Kumeyaay
Escondido, CA, 92025
Phone: (760) 737 - 7628
Fax: (760) 747-8568

Jamul Indian Village

Erica Pinto, Chairperson
P.O. Box 612 Kumeyaay
Jamul, CA, 91935
Phone: (619) 669 - 4785
Fax: (619) 669-4817
epinto@jiv-nsn.gov

Kwaaymii Laguna Band of Mission Indians

Carmen Lucas,
P.O. Box 775 Kumeyaay
Pine Valley, CA, 91962
Phone: (619) 709 - 4207

La Posta Band of Diegueno Mission Indians

Javaughn Miller, Tribal Administrator
8 Crestwood Road Kumeyaay
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

La Posta Band of Diegueno Mission Indians

Gwendolyn Parada, Chairperson
8 Crestwood Road Kumeyaay
Boulevard, CA, 91905
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LP13boots@aol.com

Manzanita Band of Kumeyaay Nation

Angela Elliott Santos, Chairperson
P.O. Box 1302 Kumeyaay
Boulevard, CA, 91905
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Fax: (619) 766-4957

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Proposed Sweetwater Central-Wheeler Tank and System Improvements Project, San Diego County.

**Native American Heritage Commission
Native American Contact List
San Diego County
1/11/2019**

**Mesa Grande Band of Diegueno
Mission Indians**

Mario Morales, Cultural
Resources Representative
PMB 366 35008 Pala Temecula Rd. Kumeyaay
Pala, CA, 92059
Phone: (760) 622 - 1336

**Sycuan Band of the Kumeyaay
Nation**

Cody J. Martinez, Chairperson
1 Kwaaypaay Court Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

**Mesa Grande Band of Diegueno
Mission Indians**

Virgil Oyos, Chairperson
P.O Box 270 Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760) 782 - 3818
Fax: (760) 782-9092
mesagrandeband@msn.com

**Viejas Band of Kumeyaay
Indians**

Julie Hagen,
1 Viejas Grade Road Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

**San Pasqual Band of Diegueno
Mission Indians**

John Flores, Environmental
Coordinator
P. O. Box 365 Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
johnf@sanpasqualtribe.org

**Viejas Band of Kumeyaay
Indians**

Robert Welch, Chairperson
1 Viejas Grade Road Kumeyaay
Alpine, CA, 91901
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jhagen@viejas-nsn.gov

**San Pasqual Band of Diegueno
Mission Indians**

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**Sycuan Band of the Kumeyaay
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This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Proposed Sweetwater Central-Wheeler Tank and System Improvements Project, San Diego County.



SWEETWATER AUTHORITY

505 GARRETT AVENUE
POST OFFICE BOX 2328
CHULA VISTA, CALIFORNIA 91912-2328
(619) 420-1413
FAX (619) 425-7469
<http://www.sweetwater.org>

GOVERNING BOARD

STEVE CASTANEDA, CHAIR
JOSE PRECIADO, VICE CHAIR
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TISH BERGE
GENERAL MANAGER

JENNIFER H. SABINE
ASSISTANT GENERAL MANAGER

August 30, 2019

Robert Welch, Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, CA 91901

Subject: Proposed Central-Wheeler Tank and System Improvements,
San Diego County, CA
SWA File: B.P. 20014016

Dear Mr. Welch:

Environmental Science Associates (ESA) is working with Sweetwater Authority on preparing technical documents and a CEQA compliant environmental document in support of the proposed Central Wheeler Tank and System Improvements Project (Project). The Project is located in the unincorporated community of Sunnyside, San Diego County, from just west of the intersection of San Miguel Road and State Route 125, to the southwest corner of the Sweetwater Reservoir property (please refer to the enclosed project vicinity map). The Project includes the installation of an 800,000 gallon water tank, two sections of 16-inch PVC water main, and supporting facilities, including a maintenance road and a drain line.

A letter requesting identification of spiritually significant and sacred sites or traditional use areas in the Project vicinity was sent to the Native American Heritage Commission (NAHC), and a records search was conducted of the archaeological databases maintained at the California Historical Resources Information System. The search at the NAHC was positive. The search at the information center indicated that eight previously recorded resources were identified within a 0.5-mile radius of the Project study area. A portion of one of the sites, CA-SDI-5695 (P-37-005695), is partially located within the Project footprint. CA-SDI-5695 is a prehistoric archaeological resource originally documented in 1978 containing six manos and mano fragments, along with five lithic tools, located on a plowed knoll top. The resource was revisited in 1989 by Caltrans staff and was described as a "light, diffuse scatter of lithics." At the time, the boundary of the resource was also extended south to San Miguel Road. Subsequently, in an addendum to the same survey report, the site is noted as destroyed by a County of San Diego campground facility ("Sweetwater Summit Regional Park"). In 2018, AECOM, a consulting firm, tested approximately 2.4 acres of the southwestern portion of site CA-SDI-5695, near San Miguel Road. The testing program involved the excavation of 25 shovel test pits and resulted in the recovery of two shell fragments. Given the near

*A Public Water Agency
Serving National City, Chula Vista and Surrounding Areas*

Robert Welch

Re: Proposed Central-Wheeler Tank System Improvements, San Diego County, CA

August 30, 2019

Page 2 of 2

absence of surface and subsurface cultural materials, the report concluded that the tested portion of CA-SDI-5695 likely was not eligible for the California Register of Historical Resources.

An extensive field survey was conducted by ESA staff on January 15, 2019 that included the portions of CA-SDI-5695 within the Project area. No cultural materials were found during the field survey within the southern portion of the Project area in San Miguel Road and, as noted above, previous archaeological testing failed to find a subsurface archaeological deposit. The portion of CA-SDI-5695 in the northwestern part of the Project site is centered on the knoll top and near the vicinity of the water tank, which would be located southeast of the knoll top. A total of eight widely scattered surface artifacts, including lithic debitage and one metate, were found in this area. This area has seen less development than other portions, although the area has been impacted by past agricultural and other activities. In addition, the elevated topography and shallow, cobbly soils of the knoll indicate that a geological mechanism for burial of archaeological resources is lacking. As such, a subsurface archaeological deposit in this area is highly unlikely. What remains likely constitutes the scattered remnants of the archaeological site, an archaeological site that has largely been destroyed. No cultural materials were found in the area of the proposed tank.

Pursuant to the letter received in response from the NAHC, we are contacting you as a potentially interested party. We would like to know if you have any questions or concerns regarding this Project, or would like to share any information with us. If you have information regarding heritage resources within the Project area or concerns associated with the Project, please contact Dr. Michael R. Bever, RPA, at (619) 719-4200 or mbever@esassoc.com.

Sincerely,

SWEETWATER AUTHORITY



Ron R. Mosher

Director of Engineering

RRM:IM:vn

Enclosures: Project Vicinity Map

cc: Dr. Michael R. Bever, RPA, Environmental Science Associates

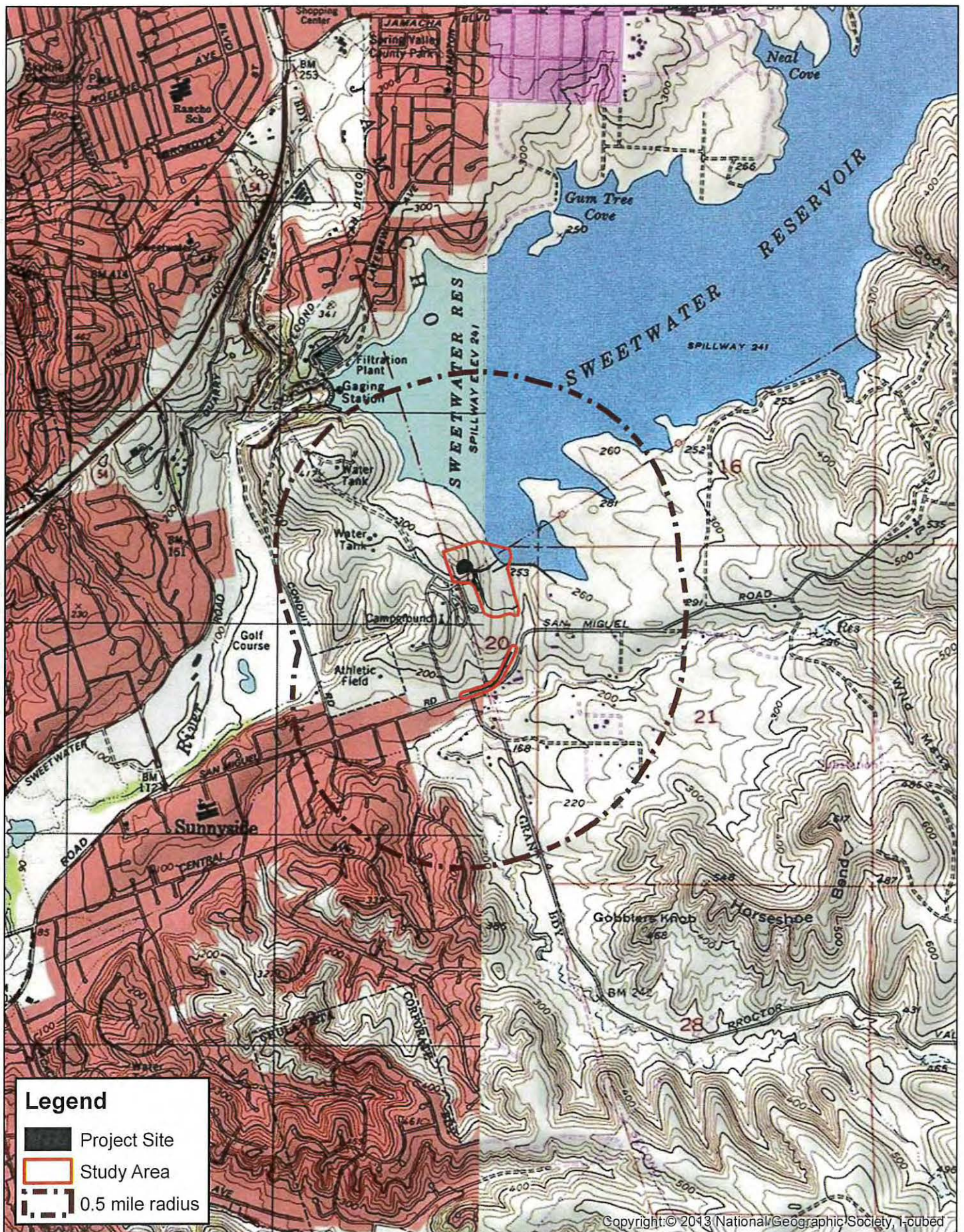
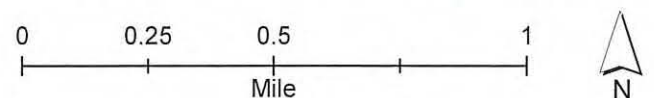


Figure 1. Project Vicinity

Central Wheeler Tank and System Improvements



VIEJAS

TRIBAL GOVERNMENT

P.O. Box 908
Alpine, CA 91903
#1 Viejas Grade Road
Alpine, CA 91901

September 24, 2019

Phone: 6194453810
Fax: 6194455337
viejas.com

Ron R. Mosher
Sweetwater Authority
505 Garrett Avenue
Post Office Box 2328
Chula Vista California 91912-2328

RE: Central-Wheeler Tank Improvements

Dear, Mr. Mosher

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site has cultural significance or ties to Viejas.

Viejas Band request that a Kumeyaay Cultural Monitor be on site for ground disturbing activities to inform us of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains.

Please call me at 619-659-2312 or Ernest Pingleton at 619-659-2314 or email, rteran@viejas-nsn.gov or epingleton@viejas-nsn.gov, for scheduling. Thank you.

Sincerely,



Ray Teran, Resource Management
VIEJAS BAND OF KUMEYAAY INDIANS



Appendix C

Confidential Resource Location Map – Bound Separately



Appendix D
**Confidential DPR Site Record
Form – Bound Separately**



Appendix D

Energy Calculations

Appendix D - Energy Analysis

1. Energy Calculations
2. Energy Background Information
3. CalEEMod Output
4. EMFAC output

Appendix D - Energy Analysis

1. Energy Calculations

CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT
Fuel Conversion

Construction Fuel Consumption Summary

| | gallons | |
|-----------------------|-------------------|---------------|
| Year | Diesel | Gas |
| Demolition | 517.65 | 42.67 |
| Site Preparation | 1,820.11 | 31.99 |
| Grading | 776.47 | 63.99 |
| Building Construction | 9,254.62563698697 | 560.84 |
| Paving | 463.34 | 74.36 |
| Architectural Coating | 125.28 | 8.26 |
| Total Offroad | 9,969.15 | 0.00 |
| Total OnRoad | 2,988.33 | 782.11 |
| Total | 12,957.48 | 782.11 |
| Average Annual | 12,957.48 | 782.11 |

9 Months - Project Length

| | | |
|------------------------|---------------|------------------|
| County Usage (gallons) | 92,000,000.00 | 1,208,000,000.00 |
| % of County | 0.0141% | 0.0001% |

| | | |
|----------------------------------------|----------------|--------|
| Construction electricity Usage: | 383 | kWh/yr |
| County Usage | 19,047,674,168 | kWh/yr |
| % of County | 0.00000% | |

| | | |
|----------------------------|-------|---------|
| Idling Fuel Savings | 42.79 | gallons |
|----------------------------|-------|---------|

Annual Operational Fuel Consumption

| | gallons | |
|-------------|---------------|------------------|
| | Diesel | Gas |
| Project | 34.61 | 890.88 |
| County | 92,000,000.00 | 1,208,000,000.00 |
| % of County | 0.00004% | 0.0001% |

Annual Operational Energy Consumption

| | kWh/yr | kBTU/yr |
|---------|----------------|----------------|
| Project | 136,315 | 0 |
| SDG&E | 17,720,750,000 | 83,950,000,000 |
| %SDG&E | 0.00077% | 0.00000% |
| County | 19,047,674,168 | 53,378,475,672 |
| %County | 0.00072% | 0.00000% |

*Pipeline and water tank projects do not result in natural gas consumption. Natural Gas emissions provided in the CalEEMod output are defaults from industrial land-use type which assumes building construction and operation including office space which would require natural gas. Therefore the CalEEMod output for natural gas is ignored for the purposes of this project.

Assumptions

| | | |
|--------------|---------------------------------------------------------------------------------------|----------------------------------------------------------|
| | 10.21 diesel | KgCO ₂ /gallon ¹ |
| | 8.78 gasoline | KgCO ₂ /gallon ¹ |
| | 1 MT = 1,000 kilograms | |
| Construction | diesel | Used for trucks (haul and vendor) and off-road equipment |
| | gasoline | worker vehicles |
| | *Mitigated and unmitigated emissions will be the same as vehicle use does not change. | |
| Operation | diesel | Majority of trucks and buses |
| | gasoline | remaining vehicle mix |

LCFS & Pavley assumed for on-road vehicles after year 2011

1 USEPA 2016. *Greenhouse Gas Inventory Guidance Direct Emissions from Mobile Combustion Sources*. January. Available: https://www.epa.gov/sites/production/files/2016-03/documents/mobileemissions_3_2016.pdf

CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT
Fuel Conversion - Construction

| | MT/yr | Fuel Type | Factor KGCO ₂ /gal | Gallons | Total Diesel (gal) | Total Gas (gal) |
|------------------------------|---------|-----------|----------------------------------|---------|-----------------------|--------------------|
| <i>Demolition</i> | | | | | | |
| Off-road | 5.2852 | diesel | 10.21 | 518 | | |
| Haul | 0.0000 | diesel | 10.21 | 0 | | |
| Vendor | 0.0000 | diesel | 10.21 | 0 | | |
| Worker | 0.3746 | gasoline | 8.78 | 43 | 518 | 43 |
| <i>Site Preparation</i> | | | | | | |
| Off-road | 6.6188 | diesel | 10.21 | 648 | | |
| Haul | 11.7204 | diesel | 10.21 | 1,148 | | |
| Vendor | 0.0000 | diesel | 10.21 | 0 | | |
| Worker | 0.2809 | gasoline | 8.78 | 32 | 1,796 | 32 |
| <i>Grading</i> | | | | | | |
| Off-road | 7.9278 | diesel | 10.21 | 776 | | |
| Haul | 0.0000 | diesel | 10.21 | 0 | | |
| Vendor | 0.0000 | diesel | 10.21 | 0 | | |
| Worker | 0.5618 | gasoline | 8.78 | 64 | 776 | 64 |
| <i>Building Construction</i> | | | | | | |
| Off-road | 76 | diesel | 10.21 | 7,438 | | |
| Haul | 11 | diesel | 10.21 | 1,039 | | |
| Vendor | 8 | diesel | 10.21 | 778 | | |
| Worker | 5 | gasoline | 8.78 | 561 | 9,254 | 561 |
| <i>Paving</i> | | | | | | |
| Off-road | 4.7307 | diesel | 10.21 | 463 | | |
| Haul | 0.0000 | diesel | 10.21 | 0 | | |
| Vendor | 0.0000 | diesel | 10.21 | 0 | | |
| Worker | 0.6529 | gasoline | 8.78 | 74 | 463 | 74 |
| <i>Architectural Coating</i> | | | | | | |
| Off-road | 1.2791 | diesel | 10.21 | 125 | | |
| Haul | 0.0000 | diesel | 10.21 | 0 | | |
| Vendor | 0.0000 | diesel | 10.21 | 0 | | |
| Worker | 0.0725 | gasoline | 8.78 | 8 | 125 | 8 |

Construction Water Energy Estimates:

| | | | | |
|----------|--------------|-----------|--------|---------------------------|
| Mgal/day | Total (Mgal) | kWh | kWh/yr | 0.49 acres |
| 0.0015 | 0.2646 | 3445.3566 | 383 | 9 project length (Months) |
| | | | | 5 days/week |

Electricity Factors (kWh/Mgal):

| | |
|-----------------------|------|
| Supply: | 9727 |
| Treat: | 111 |
| Distribute: | 1272 |
| Wastewater Treatment: | 1911 |

Sources:

Electricity Intensity Factors - California Emissions Estimator Model (CalEEMod).

Estimated construction water use assumed to be generally equivalent to landscape irrigation, based on a factor of 20.94 gallons per year per square foot of landscaped area, which assumes high water demand landscaping materials and an irrigation system efficiency of 85%.

Factor is therefore (20.94 GAL/SF/year) x (43,560 SF/acre) / (365 days/year) / (0.85) = 2,940 gallons/acre/day, rounded up to 3,000 gallons/acre/day. Project is 8.2 acres.

(U.S. Department of Energy, Energy Efficiency & Renewable Energy, Federal Energy Management Program. "Guidelines for Estimating Unmetered Landscaping Water Use." July 2010. Page 12, Table 4 - Annual Irrigation Factor – Landscaped Areas with High Water Requirements).

CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT
Fuel Saving From Idling

| | Haul | | | Vendor | | |
|---------------------------|--------------|-------------------|--------------------|---------------|-------------------|--------------------|
| | Trips | Idle Hours | Idling Fuel | Trips | Idle Hours | Idling Fuel |
| Demolition | 0 | 0 | 0 | 0 | 0 | 0 |
| Site Preparation | 300 | 25 | 24 | 0 | 0 | 0 |
| Grading | 0 | 0 | 0 | 0 | 0 | 0 |
| Building Construction | 0 | 0 | 0 | 4 | 0.33 | 0.16 |
| Paving | 0 | 0 | 0 | 0 | 0 | 0 |
| Architectural Coating | 0 | 0 | 0 | 0 | 0 | 0 |
| Fuel from Idling: | | 25 | 24 | | 0.33 | 0.16 |
| Total Fuel: | | | 66 | | | 0.44 |
| Fuel Saved ¹ : | | | 43 | | | 0.28 |
| Minutes of Idling | 5 | | | | | |
| | Haul | Vendor | | | | |
| Diesel Fuel Consumption | 0.9563 | 0.4783 | gallons/hour | | | |

1 *Estimated fuel savings from Anti-idling regulations (64% based on estimated CARB emissions Reductions).*

Source: California Air Resources Board (CARB), 2004. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, Appendix F, July 2004, <https://www.arb.ca.gov/regact/idling/idling.htm>, accessed November 2016.

CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT
Fuel Conversion - Operational

Project

| Gasoline | % Fleet mix | | | | | | | |
|-----------------|--------------------|----------|----------|----------|----------|----------|----------|-------|
| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MCY | MH | Total |
| 0.588316 | 0.042913 | 0.184449 | 0.110793 | 0.017294 | 0.005558 | 0.006181 | 0.001271 | 0.96 |

| Diesel | % Fleet mix | | | | | | | |
|---------------|--------------------|----------|----------|----------|--|--|--|-------|
| MHD | HHD | OBUS | UBUS | SBUS | | | | Total |
| 0.015534 | 0.023021 | 0.001902 | 0.002024 | 0.000745 | | | | 0.04 |

| | Total CO₂ | Factor | |
|--------------------|-----------------------------|-----------------------------|----------------|
| | MT/yr | KGCO₂/gal | Gallons |
| <i>Unmitigated</i> | | | |
| Diesel | 0.35 | 10.21 | 34.61 |
| Gasoline | 7.82 | 8.78 | 890.88 |
| Total | 8.1753 | | |

Appendix D- Energy Analysis
2. Energy Background Information

CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT

Energy Information - Electricity

Accessed: Mar-19

Electricity Information

SDG&E

| | | |
|------------------|--------------------|-----------|
| San Diego County | 19,047,674,168 kWh | |
| | 19,048 gWh | 2019 Data |

[CEC Electircal Consumption by County: http://www.ecdms.energy.ca.gov/elecbycounty.aspx](http://www.ecdms.energy.ca.gov/elecbycounty.aspx)

| | | |
|-------------|--------------------|-------------------|
| SDG&E Total | 17,720,750,000 kWh | |
| | 17,721 GWh | 2019 ¹ |

¹ CEC, 2016. Electricity Consumption by Entity; <http://www.ecdms.energy.ca.gov/elecbyutil.aspx>

² [CEC, 2016. http://www.ecdms.energy.ca.gov/elecbyutil.aspx](http://www.ecdms.energy.ca.gov/elecbyutil.aspx)

Electric Power Mix Delivered to SDG&E 2018

| Energy Resources | 2018 Power Mix ^a | 2018 Eco Choice Mix ^a | 2018 CA Power Mix ^a |
|-------------------------------------------|-----------------------------|-------------------------------------|--------------------------------|
| Eligible Renewable | 43% | 100% | 31% |
| • Biomass & waste | 2% | 0% | 2% |
| • Geothermal | 0% | 0% | 5% |
| • Small hydroelectric | 0% | 0% | 2% |
| • Solar | 20% | 100% | 11% |
| • Wind | 21% | 0% | 11% |
| Coal | 0% | 0% | 3% |
| Large Hydroelectric | 0% | 0% | 11% |
| Natural Gas | 29% | 0% | 35% |
| Nuclear | 0% | 0% | 9% |
| Other | <1 | 0% | <1 |
| Unspecified sources of power ^b | 27% | 0% | 11% |
| TOTAL | 100% | 100% | 100% |

^a California Energy Commission, Utility Annual Power Content Labels for 2018

^b "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.

<https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure/power-content-label-pcl-copy/annual-power>

CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT

Energy Information -Natural Gas

Accessed: Mar-19

Natural Gas Information

SDG&E

San Diego 533.912231 million therms
 533,912,231 therms
 1 Therm = 99.9761 CF
 53,378,462,598 cubic feet
 53,378 million cubic feet
 1 Therm = 99976.12449 BTU
 5.33785E+13 BTU
 53,378,475,672 kBTU
 53,378,476 MBTU

[CEC: Gas Consumption by County http://www.ecdms.energy.ca.gov/gasbycounty.aspx](http://www.ecdms.energy.ca.gov/gasbycounty.aspx)

2019 data

SDG&E Total

| 2015 | 2019 | 2020 | |
|-----------------|----------------|----------------|-------------------------------|
| 336 | 230 | 250 | MMCF/day (total Supply Taken) |
| 122,640 | 83,950 | 91,250 | MMCF/year |
| 1.2264E+11 | 83950000000 | 91250000000 | CF/year |
| 1,000 | 1,000 | 1,000 | BTU per cubic feet |
| 1.2264E+14 | 8.395E+13 | 9.125E+13 | BTU |
| 122,640 | 83,950 | 91,250 | Billion BTU |
| 122,640,000 | 83,950,000 | 91,250,000 | Million BTU |
| 122,640,000,000 | 83,950,000,000 | 91,250,000,000 | kBTU |

[SoCal Gas 2020 California Gas Report: https://www.socalgas.com/regulatory/cgr.shtml.](https://www.socalgas.com/regulatory/cgr.shtml)

CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT

Energy Information - Transportation Fuels

Accessed: Mar-19

Transportation Fuels

Gasoline

State Consumption

13,475 Millions of gallons 2018
13,475,000,000.00 gallons

County Consumption

1,208 million gallons San Diego 2018

Diesel

Diesel Consumption

1,602 Millions of gallons 2018
1,602,000,000.00 gallons

County Consumption

92 million gallons San Diego

<https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting>

[CEC-A15 Results.xls](#)

Appendix D - Energy Analysis

3. CalEEMod Output

Sweetwater CWT CalEEMod - San Diego Air Basin, Annual

Sweetwater CWT CalEEMod

San Diego Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|------------------------|------|----------|-------------|--------------------|------------|
| General Light Industry | 9.00 | 1000sqft | 0.21 | 9,000.00 | 0 |
| Other Asphalt Surfaces | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| General Light Industry | 4.43 | 1000sqft | 0.10 | 4,430.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|---------------------------------|--------------------------|---------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.6 | Precipitation Freq (Days) | 40 |
| Climate Zone | 10 | Operational Year | 2020 | | |
| Utility Company | San Diego Gas & Electric | | | | |
| CO2 Intensity (lb/MW hr) | 720.49 | CH4 Intensity (lb/MW hr) | 0.029 | N2O Intensity (lb/MW hr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tank retaining wall slab will be 9000 sq ft; assumed general light industry

Road extension of 100 ft by 20 ft W; assumed other asphalt surfaces

Construction Phase - Construction would take place for approximately nine months, from October 2019 through July 2020

Grading - 2400 cubic yards of material imported.

Vehicle Trips - There will be 10 trips per year for O&M; proposed trip #s are very conservative.

| Table Name | Column Name | Default Value | New Value |
|----------------------|-------------|---------------|-----------|
| tblConstructionPhase | NumDays | 5.00 | 10.00 |

| | | | |
|----------------------|---------------------|------------|------------|
| tblConstructionPhase | NumDays | 100.00 | 150.00 |
| tblConstructionPhase | NumDays | 2.00 | 15.00 |
| tblConstructionPhase | NumDays | 5.00 | 10.00 |
| tblConstructionPhase | NumDays | 1.00 | 15.00 |
| tblConstructionPhase | PhaseEndDate | 3/19/2020 | 7/20/2020 |
| tblConstructionPhase | PhaseEndDate | 3/5/2020 | 6/22/2020 |
| tblConstructionPhase | PhaseEndDate | 10/17/2019 | 11/25/2019 |
| tblConstructionPhase | PhaseEndDate | 3/12/2020 | 7/6/2020 |
| tblConstructionPhase | PhaseEndDate | 10/15/2019 | 11/4/2019 |
| tblConstructionPhase | PhaseStartDate | 3/13/2020 | 7/7/2020 |
| tblConstructionPhase | PhaseStartDate | 10/18/2019 | 11/26/2019 |
| tblConstructionPhase | PhaseStartDate | 10/16/2019 | 11/5/2019 |
| tblConstructionPhase | PhaseStartDate | 3/6/2020 | 6/23/2020 |
| tblGrading | AcresOfGrading | 7.50 | 0.50 |
| tblGrading | MaterialImported | 0.00 | 2,400.00 |
| tblGrading | MaterialSiltContent | 6.90 | 4.30 |
| tblGrading | MaterialSiltContent | 6.90 | 4.30 |
| tblGrading | MeanVehicleSpeed | 7.10 | 40.00 |
| tblGrading | MeanVehicleSpeed | 7.10 | 40.00 |
| tblVehicleTrips | ST_TR | 1.32 | 0.50 |
| tblVehicleTrips | SU_TR | 0.68 | 0.50 |
| tblVehicleTrips | WD_TR | 6.97 | 0.50 |

2.0 Emissions Summary

2.1 Overall Construction Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--|-----|-----|----|-----|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-----|-----|------|
|--|-----|-----|----|-----|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-----|-----|------|

| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---------|---------|--------|--------|-------------|-------------|--------|--------|-------------|--------|--------|--------|---------|---------|--------|--------|---------|
| 2019 | 0.0324 | 0.3554 | 0.2452 | 5.3000e-004 | 0.0165 | 0.0176 | 0.0341 | 5.3400e-003 | 0.0164 | 0.0217 | 0.0000 | 48.1837 | 48.1837 | 0.0100 | 0.0000 | 48.4345 |
| 2020 | 0.2205 | 0.6235 | 0.5279 | 9.0000e-004 | 6.9200e-003 | 0.0351 | 0.0420 | 1.8800e-003 | 0.0324 | 0.0342 | 0.0000 | 79.3240 | 79.3240 | 0.0222 | 0.0000 | 79.8784 |
| Maximum | 0.2205 | 0.6235 | 0.5279 | 9.0000e-004 | 0.0165 | 0.0351 | 0.0420 | 5.3400e-003 | 0.0324 | 0.0342 | 0.0000 | 79.3240 | 79.3240 | 0.0222 | 0.0000 | 79.8784 |

Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|---------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|---------|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2019 | 0.0324 | 0.3554 | 0.2452 | 5.3000e-004 | 0.0165 | 0.0176 | 0.0341 | 5.3400e-003 | 0.0164 | 0.0217 | 0.0000 | 48.1837 | 48.1837 | 0.0100 | 0.0000 | 48.4344 |
| 2020 | 0.2205 | 0.6235 | 0.5279 | 9.0000e-004 | 6.9200e-003 | 0.0351 | 0.0420 | 1.8800e-003 | 0.0324 | 0.0342 | 0.0000 | 79.3240 | 79.3240 | 0.0222 | 0.0000 | 79.8784 |
| Maximum | 0.2205 | 0.6235 | 0.5279 | 9.0000e-004 | 0.0165 | 0.0351 | 0.0420 | 5.3400e-003 | 0.0324 | 0.0342 | 0.0000 | 79.3240 | 79.3240 | 0.0222 | 0.0000 | 79.8784 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|------------|----------------------------------------------|--------------------------------------------|
| 1 | 10-1-2019 | 12-31-2019 | 0.3859 | 0.3859 |
| 2 | 1-1-2020 | 3-31-2020 | 0.3329 | 0.3329 |
| 3 | 4-1-2020 | 6-30-2020 | 0.3267 | 0.3267 |
| 4 | 7-1-2020 | 9-30-2020 | 0.1856 | 0.1856 |
| | | Highest | 0.3859 | 0.3859 |

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 | 0.0688 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |
| Energy | 2.3500e-003 | 0.0214 | 0.0180 | 1.3000e-004 | | 1.6300e-003 | 1.6300e-003 | | 1.6300e-003 | 1.6300e-003 | 0.0000 | 67.8336 | 67.8336 | 2.2400e-003 | 8.0000e-004 | 68.1273 |
| Mobile | 2.2400e-003 | 0.0101 | 0.0271 | 9.0000e-005 | 7.3900e-003 | 9.0000e-005 | 7.4800e-003 | 1.9800e-003 | 8.0000e-005 | 2.0600e-003 | 0.0000 | 8.1642 | 8.1642 | 4.4000e-004 | 0.0000 | 8.1753 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 3.3798 | 0.0000 | 3.3798 | 0.1997 | 0.0000 | 8.3733 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.9853 | 13.2159 | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |
| Total | 0.0734 | 0.0315 | 0.0453 | 2.2000e-004 | 7.3900e-003 | 1.7200e-003 | 9.1100e-003 | 1.9800e-003 | 1.7100e-003 | 3.6900e-003 | 4.3651 | 89.2141 | 93.5792 | 0.3042 | 3.3000e-003 | 102.1657 |

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 | 0.0688 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |
| Energy | 2.3500e-003 | 0.0214 | 0.0180 | 1.3000e-004 | | 1.6300e-003 | 1.6300e-003 | | 1.6300e-003 | 1.6300e-003 | 0.0000 | 67.8336 | 67.8336 | 2.2400e-003 | 8.0000e-004 | 68.1273 |
| Mobile | 2.2400e-003 | 0.0101 | 0.0271 | 9.0000e-005 | 7.3900e-003 | 9.0000e-005 | 7.4800e-003 | 1.9800e-003 | 8.0000e-005 | 2.0600e-003 | 0.0000 | 8.1642 | 8.1642 | 4.4000e-004 | 0.0000 | 8.1753 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 3.3798 | 0.0000 | 3.3798 | 0.1997 | 0.0000 | 8.3733 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.9853 | 13.2159 | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |
| Total | 0.0734 | 0.0315 | 0.0453 | 2.2000e-004 | 7.3900e-003 | 1.7200e-003 | 9.1100e-003 | 1.9800e-003 | 1.7100e-003 | 3.6900e-003 | 4.3651 | 89.2141 | 93.5792 | 0.3042 | 3.3000e-003 | 102.1657 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

3.0 Construction Detail

Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|--------------|-----------------------|-----------------------|------------|------------|---------------|----------|-------------------|
| 1 | Demolition | Demolition | 10/1/2019 | 10/14/2019 | 5 | 10 | |
| 2 | Site Preparation | Site Preparation | 10/15/2019 | 11/4/2019 | 5 | 15 | |
| 3 | Grading | Grading | 11/5/2019 | 11/25/2019 | 5 | 15 | |
| 4 | Building Construction | Building Construction | 11/26/2019 | 6/22/2020 | 5 | 150 | |
| 5 | Paving | Paving | 6/23/2020 | 7/6/2020 | 5 | 10 | |
| 6 | Architectural Coating | Architectural Coating | 7/7/2020 | 7/20/2020 | 5 | 10 | |

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 20,145; Non-Residential Outdoor: 6,715; Striped Parking Area: 480

OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|--------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Cement and Mortar Mixers | 4 | 6.00 | 9 | 0.56 |
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Grading | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Building Construction | Cranes | 1 | 4.00 | 231 | 0.29 |
| Building Construction | Forklifts | 2 | 6.00 | 89 | 0.20 |
| Site Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Paving | Pavers | 1 | 7.00 | 130 | 0.42 |

| | | | | | |
|-----------------------|---------------------------|---|------|-----|------|
| Paving | Rollers | 1 | 7.00 | 80 | 0.38 |
| Demolition | Rubber Tired Dozers | 1 | 1.00 | 247 | 0.40 |
| Grading | Rubber Tired Dozers | 1 | 1.00 | 247 | 0.40 |
| Building Construction | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Demolition | Tractors/Loaders/Backhoes | 2 | 6.00 | 97 | 0.37 |
| Grading | Tractors/Loaders/Backhoes | 2 | 6.00 | 97 | 0.37 |
| Paving | Tractors/Loaders/Backhoes | 1 | 7.00 | 97 | 0.37 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |

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 | 4 | 10.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 2 | 5.00 | 0.00 | 300.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 4 | 10.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 5 | 9.00 | 4.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 2.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|----------|-------------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|--------|--------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 4.7700e-003 | 0.0430 | 0.0385 | 6.0000e-005 | | 2.6900e-003 | 2.6900e-003 | | 2.5600e-003 | 2.5600e-003 | 0.0000 | 5.2601 | 5.2601 | 1.0000e-003 | 0.0000 | 5.2852 |

| | | | | | | | | | | | | | | | | |
|-------|-------------|--------|--------|-------------|--|-------------|-------------|--|-------------|-------------|--------|--------|--------|-------------|--------|--------|
| Total | 4.7700e-003 | 0.0430 | 0.0385 | 6.0000e-005 | | 2.6900e-003 | 2.6900e-003 | | 2.5600e-003 | 2.5600e-003 | 0.0000 | 5.2601 | 5.2601 | 1.0000e-003 | 0.0000 | 5.2852 |
|-------|-------------|--------|--------|-------------|--|-------------|-------------|--|-------------|-------------|--------|--------|--------|-------------|--------|--------|

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 | 2.0000e-004 | 1.5000e-004 | 1.4600e-003 | 0.0000 | 4.0000e-004 | 0.0000 | 4.0000e-004 | 1.1000e-004 | 0.0000 | 1.1000e-004 | 0.0000 | 0.3743 | 0.3743 | 1.0000e-005 | 0.0000 | 0.3746 |
| Total | 2.0000e-004 | 1.5000e-004 | 1.4600e-003 | 0.0000 | 4.0000e-004 | 0.0000 | 4.0000e-004 | 1.1000e-004 | 0.0000 | 1.1000e-004 | 0.0000 | 0.3743 | 0.3743 | 1.0000e-005 | 0.0000 | 0.3746 |

Mitigated Construction On-Site

| | | | | | | | | | | | | | | | | |
|----------|-------------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|--------|--------|
| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 4.7700e-003 | 0.0430 | 0.0385 | 6.0000e-005 | | 2.6900e-003 | 2.6900e-003 | | 2.5600e-003 | 2.5600e-003 | 0.0000 | 5.2601 | 5.2601 | 1.0000e-003 | 0.0000 | 5.2852 |
| Total | 4.7700e-003 | 0.0430 | 0.0385 | 6.0000e-005 | | 2.6900e-003 | 2.6900e-003 | | 2.5600e-003 | 2.5600e-003 | 0.0000 | 5.2601 | 5.2601 | 1.0000e-003 | 0.0000 | 5.2852 |

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 | 2.0000e-004 | 1.5000e-004 | 1.4600e-003 | 0.0000 | 4.0000e-004 | 0.0000 | 4.0000e-004 | 1.1000e-004 | 0.0000 | 1.1000e-004 | 0.0000 | 0.3743 | 0.3743 | 1.0000e-005 | 0.0000 | 0.3746 |
| Total | 2.0000e-004 | 1.5000e-004 | 1.4600e-003 | 0.0000 | 4.0000e-004 | 0.0000 | 4.0000e-004 | 1.1000e-004 | 0.0000 | 1.1000e-004 | 0.0000 | 0.3743 | 0.3743 | 1.0000e-005 | 0.0000 | 0.3746 |

3.3 Site Preparation - 2019

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 | | | | | 8.5800e-003 | 0.0000 | 8.5800e-003 | 2.1800e-003 | 0.0000 | 2.1800e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.4000e-003 | 0.0669 | 0.0311 | 7.0000e-005 | | 2.7500e-003 | 2.7500e-003 | | 2.5300e-003 | 2.5300e-003 | 0.0000 | 6.5669 | 6.5669 | 2.0800e-003 | 0.0000 | 6.6188 |
| Total | 5.4000e-003 | 0.0669 | 0.0311 | 7.0000e-005 | 8.5800e-003 | 2.7500e-003 | 0.0113 | 2.1800e-003 | 2.5300e-003 | 4.7100e-003 | 0.0000 | 6.5669 | 6.5669 | 2.0800e-003 | 0.0000 | 6.6188 |

Unmitigated Construction Off-Site

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

| | | | | | | | | | | | | | | | | |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Hauling | 1.3200e-003 | 0.0460 | 0.0100 | 1.2000e-004 | 2.5700e-003 | 1.7000e-004 | 2.7400e-003 | 7.0000e-004 | 1.6000e-004 | 8.7000e-004 | 0.0000 | 11.6939 | 11.6939 | 1.0600e-003 | 0.0000 | 11.7204 |
| 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 | 1.5000e-004 | 1.1000e-004 | 1.1000e-003 | 0.0000 | 3.0000e-004 | 0.0000 | 3.0000e-004 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.2807 | 0.2807 | 1.0000e-005 | 0.0000 | 0.2809 |
| Total | 1.4700e-003 | 0.0461 | 0.0111 | 1.2000e-004 | 2.8700e-003 | 1.7000e-004 | 3.0400e-003 | 7.8000e-004 | 1.6000e-004 | 9.5000e-004 | 0.0000 | 11.9746 | 11.9746 | 1.0700e-003 | 0.0000 | 12.0013 |

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 | | | | | 8.5800e-003 | 0.0000 | 8.5800e-003 | 2.1800e-003 | 0.0000 | 2.1800e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.4000e-003 | 0.0669 | 0.0311 | 7.0000e-005 | | 2.7500e-003 | 2.7500e-003 | | 2.5300e-003 | 2.5300e-003 | 0.0000 | 6.5669 | 6.5669 | 2.0800e-003 | 0.0000 | 6.6188 |
| Total | 5.4000e-003 | 0.0669 | 0.0311 | 7.0000e-005 | 8.5800e-003 | 2.7500e-003 | 0.0113 | 2.1800e-003 | 2.5300e-003 | 4.7100e-003 | 0.0000 | 6.5669 | 6.5669 | 2.0800e-003 | 0.0000 | 6.6188 |

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 1.3200e-003 | 0.0460 | 0.0100 | 1.2000e-004 | 2.5700e-003 | 1.7000e-004 | 2.7400e-003 | 7.0000e-004 | 1.6000e-004 | 8.7000e-004 | 0.0000 | 11.6939 | 11.6939 | 1.0600e-003 | 0.0000 | 11.7204 |
| 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 | 1.5000e-004 | 1.1000e-004 | 1.1000e-003 | 0.0000 | 3.0000e-004 | 0.0000 | 3.0000e-004 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.2807 | 0.2807 | 1.0000e-005 | 0.0000 | 0.2809 |
| Total | 1.4700e-003 | 0.0461 | 0.0111 | 1.2000e-004 | 2.8700e-003 | 1.7000e-004 | 3.0400e-003 | 7.8000e-004 | 1.6000e-004 | 9.5000e-004 | 0.0000 | 11.9746 | 11.9746 | 1.0700e-003 | 0.0000 | 12.0013 |

3.4 Grading - 2019

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 | | | | | 2.7800e-003 | 0.0000 | 2.7800e-003 | 1.7600e-003 | 0.0000 | 1.7600e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 7.1500e-003 | 0.0645 | 0.0577 | 9.0000e-005 | | 4.0300e-003 | 4.0300e-003 | | 3.8400e-003 | 3.8400e-003 | 0.0000 | 7.8902 | 7.8902 | 1.5000e-003 | 0.0000 | 7.9278 |
| Total | 7.1500e-003 | 0.0645 | 0.0577 | 9.0000e-005 | 2.7800e-003 | 4.0300e-003 | 6.8100e-003 | 1.7600e-003 | 3.8400e-003 | 5.6000e-003 | 0.0000 | 7.8902 | 7.8902 | 1.5000e-003 | 0.0000 | 7.9278 |

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 | 3.0000e-004 | 2.3000e-004 | 2.1900e-003 | 1.0000e-005 | 6.0000e-004 | 0.0000 | 6.1000e-004 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 0.5614 | 0.5614 | 2.0000e-005 | 0.0000 | 0.5618 |
| Total | 3.0000e-004 | 2.3000e-004 | 2.1900e-003 | 1.0000e-005 | 6.0000e-004 | 0.0000 | 6.1000e-004 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 0.5614 | 0.5614 | 2.0000e-005 | 0.0000 | 0.5618 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 2.7800e-003 | 0.0000 | 2.7800e-003 | 1.7600e-003 | 0.0000 | 1.7600e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 7.1500e-003 | 0.0645 | 0.0577 | 9.0000e-005 | | 4.0300e-003 | 4.0300e-003 | | 3.8400e-003 | 3.8400e-003 | 0.0000 | 7.8902 | 7.8902 | 1.5000e-003 | 0.0000 | 7.9278 |
| Total | 7.1500e-003 | 0.0645 | 0.0577 | 9.0000e-005 | 2.7800e-003 | 4.0300e-003 | 6.8100e-003 | 1.7600e-003 | 3.8400e-003 | 5.6000e-003 | 0.0000 | 7.8902 | 7.8902 | 1.5000e-003 | 0.0000 | 7.9278 |

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 | 3.0000e-004 | 2.3000e-004 | 2.1900e-003 | 1.0000e-005 | 6.0000e-004 | 0.0000 | 6.1000e-004 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 0.5614 | 0.5614 | 2.0000e-005 | 0.0000 | 0.5618 |
| Total | 3.0000e-004 | 2.3000e-004 | 2.1900e-003 | 1.0000e-005 | 6.0000e-004 | 0.0000 | 6.1000e-004 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 0.5614 | 0.5614 | 2.0000e-005 | 0.0000 | 0.5618 |

3.5 Building Construction - 2019

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 | 0.0125 | 0.1277 | 0.0981 | 1.5000e-004 | | 7.8700e-003 | 7.8700e-003 | | 7.2400e-003 | 7.2400e-003 | 0.0000 | 13.2991 | 13.2991 | 4.2100e-003 | 0.0000 | 13.4043 |

| | | | | | | | | | | | | | | | | |
|-------|--------|--------|--------|-------------|--|-------------|-------------|--|-------------|-------------|--------|---------|---------|-------------|--------|---------|
| Total | 0.0125 | 0.1277 | 0.0981 | 1.5000e-004 | | 7.8700e-003 | 7.8700e-003 | | 7.2400e-003 | 7.2400e-003 | 0.0000 | 13.2991 | 13.2991 | 4.2100e-003 | 0.0000 | 13.4043 |
|-------|--------|--------|--------|-------------|--|-------------|-------------|--|-------------|-------------|--------|---------|---------|-------------|--------|---------|

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 | 2.4000e-004 | 6.5300e-003 | 1.7500e-003 | 1.0000e-005 | 3.5000e-004 | 5.0000e-005 | 3.9000e-004 | 1.0000e-004 | 4.0000e-005 | 1.4000e-004 | 0.0000 | 1.3815 | 1.3815 | 1.1000e-004 | 0.0000 | 1.3843 |
| Worker | 4.6000e-004 | 3.5000e-004 | 3.4200e-003 | 1.0000e-005 | 9.4000e-004 | 1.0000e-005 | 9.5000e-004 | 2.5000e-004 | 1.0000e-005 | 2.6000e-004 | 0.0000 | 0.8757 | 0.8757 | 3.0000e-005 | 0.0000 | 0.8764 |
| Total | 7.0000e-004 | 6.8800e-003 | 5.1700e-003 | 2.0000e-005 | 1.2900e-003 | 6.0000e-005 | 1.3400e-003 | 3.5000e-004 | 5.0000e-005 | 4.0000e-004 | 0.0000 | 2.2573 | 2.2573 | 1.4000e-004 | 0.0000 | 2.2607 |

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 | 0.0125 | 0.1277 | 0.0981 | 1.5000e-004 | | 7.8700e-003 | 7.8700e-003 | | 7.2400e-003 | 7.2400e-003 | 0.0000 | 13.2990 | 13.2990 | 4.2100e-003 | 0.0000 | 13.4042 |
| Total | 0.0125 | 0.1277 | 0.0981 | 1.5000e-004 | | 7.8700e-003 | 7.8700e-003 | | 7.2400e-003 | 7.2400e-003 | 0.0000 | 13.2990 | 13.2990 | 4.2100e-003 | 0.0000 | 13.4042 |

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 | 2.4000e-004 | 6.5300e-003 | 1.7500e-003 | 1.0000e-005 | 3.5000e-004 | 5.0000e-005 | 3.9000e-004 | 1.0000e-004 | 4.0000e-005 | 1.4000e-004 | 0.0000 | 1.3815 | 1.3815 | 1.1000e-004 | 0.0000 | 1.3843 |
| Worker | 4.6000e-004 | 3.5000e-004 | 3.4200e-003 | 1.0000e-005 | 9.4000e-004 | 1.0000e-005 | 9.5000e-004 | 2.5000e-004 | 1.0000e-005 | 2.6000e-004 | 0.0000 | 0.8757 | 0.8757 | 3.0000e-005 | 0.0000 | 0.8764 |
| Total | 7.0000e-004 | 6.8800e-003 | 5.1700e-003 | 2.0000e-005 | 1.2900e-003 | 6.0000e-005 | 1.3400e-003 | 3.5000e-004 | 5.0000e-005 | 4.0000e-004 | 0.0000 | 2.2573 | 2.2573 | 1.4000e-004 | 0.0000 | 2.2607 |

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 | 0.0534 | 0.5488 | 0.4580 | 7.1000e-004 | | 0.0324 | 0.0324 | | 0.0298 | 0.0298 | 0.0000 | 62.0375 | 62.0375 | 0.0201 | 0.0000 | 62.5391 |
| Total | 0.0534 | 0.5488 | 0.4580 | 7.1000e-004 | | 0.0324 | 0.0324 | | 0.0298 | 0.0298 | 0.0000 | 62.0375 | 62.0375 | 0.0201 | 0.0000 | 62.5391 |

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 | 9.4000e-004 | 0.0283 | 7.5100e-003 | 7.0000e-005 | 1.6500e-003 | 1.4000e-004 | 1.7800e-003 | 4.8000e-004 | 1.3000e-004 | 6.1000e-004 | 0.0000 | 6.5438 | 6.5438 | 5.0000e-004 | 0.0000 | 6.5563 |
| Worker | 2.0600e-003 | 1.5200e-003 | 0.0149 | 4.0000e-005 | 4.4700e-003 | 3.0000e-005 | 4.5100e-003 | 1.1900e-003 | 3.0000e-005 | 1.2200e-003 | 0.0000 | 4.0448 | 4.0448 | 1.2000e-004 | 0.0000 | 4.0478 |
| Total | 3.0000e-003 | 0.0298 | 0.0224 | 1.1000e-004 | 6.1200e-003 | 1.7000e-004 | 6.2900e-003 | 1.6700e-003 | 1.6000e-004 | 1.8300e-003 | 0.0000 | 10.5886 | 10.5886 | 6.2000e-004 | 0.0000 | 10.6041 |

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 | 0.0534 | 0.5488 | 0.4580 | 7.1000e-004 | | 0.0324 | 0.0324 | | 0.0298 | 0.0298 | 0.0000 | 62.0374 | 62.0374 | 0.0201 | 0.0000 | 62.5390 |
| Total | 0.0534 | 0.5488 | 0.4580 | 7.1000e-004 | | 0.0324 | 0.0324 | | 0.0298 | 0.0298 | 0.0000 | 62.0374 | 62.0374 | 0.0201 | 0.0000 | 62.5390 |

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 | 9.4000e-004 | 0.0283 | 7.5100e-003 | 7.0000e-005 | 1.6500e-003 | 1.4000e-004 | 1.7800e-003 | 4.8000e-004 | 1.3000e-004 | 6.1000e-004 | 0.0000 | 6.5438 | 6.5438 | 5.0000e-004 | 0.0000 | 6.5563 |
| Worker | 2.0600e-003 | 1.5200e-003 | 0.0149 | 4.0000e-005 | 4.4700e-003 | 3.0000e-005 | 4.5100e-003 | 1.1900e-003 | 3.0000e-005 | 1.2200e-003 | 0.0000 | 4.0448 | 4.0448 | 1.2000e-004 | 0.0000 | 4.0478 |
| Total | 3.0000e-003 | 0.0298 | 0.0224 | 1.1000e-004 | 6.1200e-003 | 1.7000e-004 | 6.2900e-003 | 1.6700e-003 | 1.6000e-004 | 1.8300e-003 | 0.0000 | 10.5886 | 10.5886 | 6.2000e-004 | 0.0000 | 10.6041 |

3.6 Paving - 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 | 3.8600e-003 | 0.0361 | 0.0356 | 6.0000e-005 | | 1.9800e-003 | 1.9800e-003 | | 1.8300e-003 | 1.8300e-003 | 0.0000 | 4.6965 | 4.6965 | 1.3700e-003 | 0.0000 | 4.7307 |
| Paving | 2.4000e-004 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 4.1000e-003 | 0.0361 | 0.0356 | 6.0000e-005 | | 1.9800e-003 | 1.9800e-003 | | 1.8300e-003 | 1.8300e-003 | 0.0000 | 4.6965 | 4.6965 | 1.3700e-003 | 0.0000 | 4.7307 |

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 | 3.3000e-004 | 2.5000e-004 | 2.4100e-003 | 1.0000e-005 | 7.2000e-004 | 1.0000e-005 | 7.3000e-004 | 1.9000e-004 | 0.0000 | 2.0000e-004 | 0.0000 | 0.6524 | 0.6524 | 2.0000e-005 | 0.0000 | 0.6529 |
| Total | 3.3000e-004 | 2.5000e-004 | 2.4100e-003 | 1.0000e-005 | 7.2000e-004 | 1.0000e-005 | 7.3000e-004 | 1.9000e-004 | 0.0000 | 2.0000e-004 | 0.0000 | 0.6524 | 0.6524 | 2.0000e-005 | 0.0000 | 0.6529 |

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 | 3.8600e-003 | 0.0361 | 0.0356 | 6.0000e-005 | | 1.9800e-003 | 1.9800e-003 | | 1.8300e-003 | 1.8300e-003 | 0.0000 | 4.6965 | 4.6965 | 1.3700e-003 | 0.0000 | 4.7307 |
| Paving | 2.4000e-004 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 4.1000e-003 | 0.0361 | 0.0356 | 6.0000e-005 | | 1.9800e-003 | 1.9800e-003 | | 1.8300e-003 | 1.8300e-003 | 0.0000 | 4.6965 | 4.6965 | 1.3700e-003 | 0.0000 | 4.7307 |

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 | 3.3000e-004 | 2.5000e-004 | 2.4100e-003 | 1.0000e-005 | 7.2000e-004 | 1.0000e-005 | 7.3000e-004 | 1.9000e-004 | 0.0000 | 2.0000e-004 | 0.0000 | 0.6524 | 0.6524 | 2.0000e-005 | 0.0000 | 0.6529 |
| Total | 3.3000e-004 | 2.5000e-004 | 2.4100e-003 | 1.0000e-005 | 7.2000e-004 | 1.0000e-005 | 7.3000e-004 | 1.9000e-004 | 0.0000 | 2.0000e-004 | 0.0000 | 0.6524 | 0.6524 | 2.0000e-005 | 0.0000 | 0.6529 |

3.7 Architectural Coating - 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 | | | | | |
| Archit. Coating | 0.1584 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.2100e-003 | 8.4200e-003 | 9.1600e-003 | 1.0000e-005 | | 5.5000e-004 | 5.5000e-004 | | 5.5000e-004 | 5.5000e-004 | 0.0000 | 1.2766 | 1.2766 | 1.0000e-004 | 0.0000 | 1.2791 |

| | | | | | | | | | | | | | | | | |
|-------|--------|-------------|-------------|-------------|--|-------------|-------------|--|-------------|-------------|--------|--------|--------|-------------|--------|--------|
| Total | 0.1596 | 8.4200e-003 | 9.1600e-003 | 1.0000e-005 | | 5.5000e-004 | 5.5000e-004 | | 5.5000e-004 | 5.5000e-004 | 0.0000 | 1.2766 | 1.2766 | 1.0000e-004 | 0.0000 | 1.2791 |
|-------|--------|-------------|-------------|-------------|--|-------------|-------------|--|-------------|-------------|--------|--------|--------|-------------|--------|--------|

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 | 4.0000e-005 | 3.0000e-005 | 2.7000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0725 | 0.0725 | 0.0000 | 0.0000 | 0.0725 |
| Total | 4.0000e-005 | 3.0000e-005 | 2.7000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0725 | 0.0725 | 0.0000 | 0.0000 | 0.0725 |

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 | 0.1584 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.2100e-003 | 8.4200e-003 | 9.1600e-003 | 1.0000e-005 | | 5.5000e-004 | 5.5000e-004 | | 5.5000e-004 | 5.5000e-004 | 0.0000 | 1.2766 | 1.2766 | 1.0000e-004 | 0.0000 | 1.2791 |
| Total | 0.1596 | 8.4200e-003 | 9.1600e-003 | 1.0000e-005 | | 5.5000e-004 | 5.5000e-004 | | 5.5000e-004 | 5.5000e-004 | 0.0000 | 1.2766 | 1.2766 | 1.0000e-004 | 0.0000 | 1.2791 |

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 | 4.0000e-005 | 3.0000e-005 | 2.7000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0725 | 0.0725 | 0.0000 | 0.0000 | 0.0725 |
| Total | 4.0000e-005 | 3.0000e-005 | 2.7000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0725 | 0.0725 | 0.0000 | 0.0000 | 0.0725 |

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------|-------------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|--------|--------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 2.2400e-003 | 0.0101 | 0.0271 | 9.0000e-005 | 7.3900e-003 | 9.0000e-005 | 7.4800e-003 | 1.9800e-003 | 8.0000e-005 | 2.0600e-003 | 0.0000 | 8.1642 | 8.1642 | 4.4000e-004 | 0.0000 | 8.1753 |
| Unmitigated | 2.2400e-003 | 0.0101 | 0.0271 | 9.0000e-005 | 7.3900e-003 | 9.0000e-005 | 7.4800e-003 | 1.9800e-003 | 8.0000e-005 | 2.0600e-003 | 0.0000 | 8.1642 | 8.1642 | 4.4000e-004 | 0.0000 | 8.1753 |

4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|------------------------|-------------------------|----------|--------|-------------|------------|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 4.50 | 4.50 | 4.50 | 13,138 | 13,138 |

| | | | | | |
|------------------------|------|------|------|--------|--------|
| General Light Industry | 2.22 | 2.22 | 2.22 | 6,467 | 6,467 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Total | 6.72 | 6.72 | 6.72 | 19,605 | 19,605 |

4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| General Light Industry | 9.50 | 7.30 | 7.30 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| General Light Industry | 9.50 | 7.30 | 7.30 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| Other Asphalt Surfaces | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| General Light Industry | 0.588316 | 0.042913 | 0.184449 | 0.110793 | 0.017294 | 0.005558 | 0.015534 | 0.023021 | 0.001902 | 0.002024 | 0.006181 | 0.000745 | 0.001271 |
| Other Asphalt Surfaces | 0.588316 | 0.042913 | 0.184449 | 0.110793 | 0.017294 | 0.005558 | 0.015534 | 0.023021 | 0.001902 | 0.002024 | 0.006181 | 0.000745 | 0.001271 |

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|-------------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|-------------|---------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 44.5488 | 44.5488 | 1.7900e-003 | 3.7000e-004 | 44.7042 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 44.5488 | 44.5488 | 1.7900e-003 | 3.7000e-004 | 44.7042 |
| NaturalGas Mitigated | 2.3500e-003 | 0.0214 | 0.0180 | 1.3000e-004 | | 1.6300e-003 | 1.6300e-003 | | 1.6300e-003 | 1.6300e-003 | 0.0000 | 23.2848 | 23.2848 | 4.5000e-004 | 4.3000e-004 | 23.4232 |

| | | | | | | | | | | | | | | | | |
|---------------------------|-----------------|--------|--------|-----------------|--|-----------------|-----------------|--|-----------------|-----------------|--------|---------|---------|-----------------|-----------------|---------|
| NaturalGas Unmitigated | 2.3500e- 003 | 0.0214 | 0.0180 | 1.3000e- 004 | | 1.6300e- 003 | 1.6300e- 003 | | 1.6300e- 003 | 1.6300e- 003 | 0.0000 | 23.2848 | 23.2848 | 4.5000e- 004 | 4.3000e- 004 | 23.4232 |
|---------------------------|-----------------|--------|--------|-----------------|--|-----------------|-----------------|--|-----------------|-----------------|--------|---------|---------|-----------------|-----------------|---------|

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 | 143931 | 7.8000e- 004 | 7.0600e- 003 | 5.9300e- 003 | 4.0000e- 005 | | 5.4000e- 004 | 5.4000e- 004 | | 5.4000e- 004 | 5.4000e- 004 | 0.0000 | 7.6807 | 7.6807 | 1.5000e- 004 | 1.4000e- 004 | 7.7263 |
| General Light Industry | 292410 | 1.5800e- 003 | 0.0143 | 0.0120 | 9.0000e- 005 | | 1.0900e- 003 | 1.0900e- 003 | | 1.0900e- 003 | 1.0900e- 003 | 0.0000 | 15.6041 | 15.6041 | 3.0000e- 004 | 2.9000e- 004 | 15.6968 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 2.3600e- 003 | 0.0214 | 0.0180 | 1.3000e- 004 | | 1.6300e- 003 | 1.6300e- 003 | | 1.6300e- 003 | 1.6300e- 003 | 0.0000 | 23.2848 | 23.2848 | 4.5000e- 004 | 4.3000e- 004 | 23.4232 |

Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-------------------|------------------|-----------------|----------|-----------|-----------|-----------------|-----------------|---------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| General Light Industry | 143931 | 7.8000e- 004 | 7.0600e- 003 | 5.9300e- 003 | 4.0000e- 005 | | 5.4000e- 004 | 5.4000e- 004 | | 5.4000e- 004 | 5.4000e- 004 | 0.0000 | 7.6807 | 7.6807 | 1.5000e- 004 | 1.4000e- 004 | 7.7263 |
| General Light Industry | 292410 | 1.5800e- 003 | 0.0143 | 0.0120 | 9.0000e- 005 | | 1.0900e- 003 | 1.0900e- 003 | | 1.0900e- 003 | 1.0900e- 003 | 0.0000 | 15.6041 | 15.6041 | 3.0000e- 004 | 2.9000e- 004 | 15.6968 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 2.3600e- 003 | 0.0214 | 0.0180 | 1.3000e- 004 | | 1.6300e- 003 | 1.6300e- 003 | | 1.6300e- 003 | 1.6300e- 003 | 0.0000 | 23.2848 | 23.2848 | 4.5000e- 004 | 4.3000e- 004 | 23.4232 |

5.3 Energy by Land Use - Electricity

Unmitigated

| | | | | | |
|------------------------|-----------------|-----------|-------------|-------------|---------|
| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 44964.5 | 14.6948 | 5.9000e-004 | 1.2000e-004 | 14.7461 |
| General Light Industry | 91350 | 29.8540 | 1.2000e-003 | 2.5000e-004 | 29.9581 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 44.5488 | 1.7900e-003 | 3.7000e-004 | 44.7042 |

Mitigated

| | | | | | |
|------------------------|-----------------|-----------|-------------|-------------|---------|
| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 44964.5 | 14.6948 | 5.9000e-004 | 1.2000e-004 | 14.7461 |
| General Light Industry | 91350 | 29.8540 | 1.2000e-003 | 2.5000e-004 | 29.9581 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 44.5488 | 1.7900e-003 | 3.7000e-004 | 44.7042 |

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 | 0.0688 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |
| Unmitigated | 0.0688 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |

6.2 Area by SubCategory

Unmitigated

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|-------------|--------|-------------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-------------|-------------|--------|--------|-------------|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0158 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0530 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.0000e-005 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |
| Total | 0.0688 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |

Mitigated

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--|-----|-----|----|-----|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-----|-----|------|
|--|-----|-----|----|-----|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-----|-----|------|

| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
|-----------------------|-------------|--------|-------------|--------|--|--------|--------|--|--------|--------|--------|-------------|-------------|--------|--------|-------------|
| Architectural Coating | 0.0158 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0530 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.0000e-005 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |
| Total | 0.0688 | 0.0000 | 2.0000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 3.8000e-004 | 3.8000e-004 | 0.0000 | 0.0000 | 4.1000e-004 |

7.0 Water Detail

7.1 Mitigation Measures Water

| | | | | |
|-------------|-----------|--------|-------------|---------|
| | Total CO2 | CH4 | N2O | CO2e |
| Category | MT/yr | | | |
| Mitigated | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |
| Unmitigated | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |

7.2 Water by Land Use

Unmitigated

| | | | | | |
|------------------------|--------------------|-----------|--------|-------------|---------|
| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 3.10569 / 0 | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |

| | | | | | |
|------------------------|-------|----------------|---------------|--------------------|----------------|
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |

Mitigated

| | | | | | |
|------------------------|--------------------|----------------|---------------|--------------------|----------------|
| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 3.10569 / 0 | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 14.2012 | 0.1017 | 2.5000e-003 | 17.4893 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

| | | | | |
|-------------|-----------|--------|--------|--------|
| | Total CO2 | CH4 | N2O | CO2e |
| | MT/yr | | | |
| Mitigated | 3.3798 | 0.1997 | 0.0000 | 8.3733 |
| Unmitigated | 3.3798 | 0.1997 | 0.0000 | 8.3733 |

8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---------------------------|-------------------|-----------|--------|--------|--------|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 16.65 | 3.3798 | 0.1997 | 0.0000 | 8.3733 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 3.3798 | 0.1997 | 0.0000 | 8.3733 |

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---------------------------|-------------------|-----------|--------|--------|--------|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 16.65 | 3.3798 | 0.1997 | 0.0000 | 8.3733 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 3.3798 | 0.1997 | 0.0000 | 8.3733 |

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

| | |
|----------------|--------|
| Equipment Type | Number |
|----------------|--------|

11.0 Vegetation

| |
|--|
| |
|--|

Appendix D - Energy Analysis

4. EMFAC output

EMFAC2017 (v1.0.2) Emissions Inventory

Region Type: County

Region: SAN DIEGO

Calendar Year: 2020

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

| VT | Assumption (| Annual VMT | Annual Fuel Consumption (gals) |
|----------|--------------|----------------|--------------------------------|
| 1412714 | 135135 | 515,640,696.20 | 49,324,349.77 |
| gal/mi | | | |
| 0.095656 | | | |

| Region | Calendar Year | Vehicle Category | Model Year | Speed | Fuel | VMT | Fuel Consumption |
|-----------|---------------|------------------|------------|-----------|------|-------------|------------------|
| SAN DIEGO | 2020 | HHDT | Aggregate | Aggregate | GAS | 1996.634505 | 0.512469 |
| SAN DIEGO | 2020 | HHDT | Aggregate | Aggregate | DSL | 1832999.056 | 296.8261 |
| SAN DIEGO | 2020 | HHDT | Aggregate | Aggregate | NG | 30816.14015 | 12.76764 |
| SAN DIEGO | 2020 | LDA | Aggregate | Aggregate | GAS | 53431842.7 | 1797.977 |
| SAN DIEGO | 2020 | LDA | Aggregate | Aggregate | DSL | 614670.2246 | 13.82067 |
| SAN DIEGO | 2020 | LDA | Aggregate | Aggregate | ELEC | 849126.6793 | 0 |
| SAN DIEGO | 2020 | LDT1 | Aggregate | Aggregate | GAS | 5889125.742 | 235.1715 |
| SAN DIEGO | 2020 | LDT1 | Aggregate | Aggregate | DSL | 2463.952243 | 0.110218 |
| SAN DIEGO | 2020 | LDT1 | Aggregate | Aggregate | ELEC | 17133.51522 | 0 |
| SAN DIEGO | 2020 | LDT2 | Aggregate | Aggregate | GAS | 18096266.68 | 791.7467 |
| SAN DIEGO | 2020 | LDT2 | Aggregate | Aggregate | DSL | 112909.6531 | 3.458711 |
| SAN DIEGO | 2020 | LDT2 | Aggregate | Aggregate | ELEC | 78796.12434 | 0 |
| SAN DIEGO | 2020 | LHDT1 | Aggregate | Aggregate | GAS | 1308635.81 | 157.9165 |
| SAN DIEGO | 2020 | LHDT1 | Aggregate | Aggregate | DSL | 1175504.17 | 65.87354 |
| SAN DIEGO | 2020 | LHDT2 | Aggregate | Aggregate | GAS | 195409.4395 | 26.96903 |
| SAN DIEGO | 2020 | LHDT2 | Aggregate | Aggregate | DSL | 410789.0237 | 25.7889 |
| SAN DIEGO | 2020 | MCV | Aggregate | Aggregate | GAS | 659798.7747 | 18.08443 |
| SAN DIEGO | 2020 | MDV | Aggregate | Aggregate | GAS | 11798102.27 | 621.6606 |
| SAN DIEGO | 2020 | MDV | Aggregate | Aggregate | DSL | 290576.1884 | 11.70345 |
| SAN DIEGO | 2020 | MDV | Aggregate | Aggregate | ELEC | 26122.32798 | 0 |
| SAN DIEGO | 2020 | MH | Aggregate | Aggregate | GAS | 100810.5312 | 21.66205 |
| SAN DIEGO | 2020 | MH | Aggregate | Aggregate | DSL | 35416.52883 | 3.695524 |
| SAN DIEGO | 2020 | MHDT | Aggregate | Aggregate | GAS | 195204.5338 | 41.57062 |
| SAN DIEGO | 2020 | MHDT | Aggregate | Aggregate | DSL | 1122138.048 | 123.4318 |
| SAN DIEGO | 2020 | OBUS | Aggregate | Aggregate | GAS | 67147.07267 | 14.49114 |
| SAN DIEGO | 2020 | OBUS | Aggregate | Aggregate | DSL | 53431.99212 | 7.339972 |
| SAN DIEGO | 2020 | SBUS | Aggregate | Aggregate | GAS | 11222.00672 | 1.213164 |
| SAN DIEGO | 2020 | SBUS | Aggregate | Aggregate | DSL | 75332.85966 | 9.58077 |
| SAN DIEGO | 2020 | UBUS | Aggregate | Aggregate | GAS | 39098.4161 | 7.243802 |
| SAN DIEGO | 2020 | UBUS | Aggregate | Aggregate | DSL | 2628.078835 | 0.555483 |
| SAN DIEGO | 2020 | UBUS | Aggregate | Aggregate | NG | 109590.6686 | 28.62554 |

EMFAC2017 (v1.0.2) Emissions Inventory

Region Type: County

Region: SAN DIEGO

Calendar Year: 2020

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

| Haul Trucks (T7 Single Construction) | | | | |
|--------------------------------------|-------------------------------|-------|------------|---------------------------------|
| VMT | Fuel Consumption (gal/day) | | Annual VMT | Annual Fuel Consumption n |
| | 76902 | 14708 | 28,069,062 | 5,368,552 |
| | gal/mi | | | |
| | 0.191262252 | | | |

| Region | Calendar Y. | Vehicle Category | Model Year | Speed | Fuel | VMT | Fuel Consumption |
|-----------|-------------|-------------------------------|------------|-----------|------|-------------|------------------|
| SAN DIEGO | 2020 | All Other Buses | Aggregate | Aggregate | DSL | 29485.27198 | 3.446820719 |
| SAN DIEGO | 2020 | LDA | Aggregate | Aggregate | GAS | 53431842.7 | 1797.976779 |
| SAN DIEGO | 2020 | LDA | Aggregate | Aggregate | DSL | 614670.2246 | 13.82067361 |
| SAN DIEGO | 2020 | LDA | Aggregate | Aggregate | ELEC | 849126.6793 | 0 |
| SAN DIEGO | 2020 | LDT1 | Aggregate | Aggregate | GAS | 5889125.742 | 235.1715444 |
| SAN DIEGO | 2020 | LDT1 | Aggregate | Aggregate | DSL | 2463.952243 | 0.110218259 |
| SAN DIEGO | 2020 | LDT1 | Aggregate | Aggregate | ELEC | 17133.51522 | 0 |
| SAN DIEGO | 2020 | LDT2 | Aggregate | Aggregate | GAS | 18096266.68 | 791.7466996 |
| SAN DIEGO | 2020 | LDT2 | Aggregate | Aggregate | DSL | 112909.6531 | 3.458711152 |
| SAN DIEGO | 2020 | LDT2 | Aggregate | Aggregate | ELEC | 78796.12434 | 0 |
| SAN DIEGO | 2020 | LHD1 | Aggregate | Aggregate | GAS | 1308635.81 | 157.916549 |
| SAN DIEGO | 2020 | LHD1 | Aggregate | Aggregate | DSL | 1175504.17 | 65.8735366 |
| SAN DIEGO | 2020 | LHD2 | Aggregate | Aggregate | GAS | 195409.4395 | 26.96903099 |
| SAN DIEGO | 2020 | LHD2 | Aggregate | Aggregate | DSL | 410789.0237 | 25.78890113 |
| SAN DIEGO | 2020 | MCY | Aggregate | Aggregate | GAS | 659798.7747 | 18.08443051 |
| SAN DIEGO | 2020 | MDV | Aggregate | Aggregate | GAS | 11798102.27 | 621.6605794 |
| SAN DIEGO | 2020 | MDV | Aggregate | Aggregate | DSL | 290576.1884 | 11.7034523 |
| SAN DIEGO | 2020 | MDV | Aggregate | Aggregate | ELEC | 26122.32798 | 0 |
| SAN DIEGO | 2020 | MH | Aggregate | Aggregate | GAS | 100810.5312 | 21.66204892 |
| SAN DIEGO | 2020 | MH | Aggregate | Aggregate | DSL | 35416.52883 | 3.695523514 |
| SAN DIEGO | 2020 | Motor Coach | Aggregate | Aggregate | DSL | 23946.72014 | 3.893151405 |
| SAN DIEGO | 2020 | OBUS | Aggregate | Aggregate | GAS | 67147.07267 | 14.49113552 |
| SAN DIEGO | 2020 | PTO | Aggregate | Aggregate | DSL | 26988.82176 | 5.702802051 |
| SAN DIEGO | 2020 | SBUS | Aggregate | Aggregate | GAS | 11222.00672 | 1.213163646 |
| SAN DIEGO | 2020 | SBUS | Aggregate | Aggregate | DSL | 75332.85966 | 9.580770365 |
| SAN DIEGO | 2020 | T6 Ag | Aggregate | Aggregate | DSL | 424.2340519 | 0.047422816 |
| SAN DIEGO | 2020 | T6 CAIRP heavy | Aggregate | Aggregate | DSL | 16380.12291 | 1.518779565 |
| SAN DIEGO | 2020 | T6 CAIRP small | Aggregate | Aggregate | DSL | 2327.482689 | 0.228493016 |
| SAN DIEGO | 2020 | T6 instate construction heavy | Aggregate | Aggregate | DSL | 43154.8233 | 5.447079125 |
| SAN DIEGO | 2020 | T6 instate construction small | Aggregate | Aggregate | DSL | 112870.3652 | 14.17125294 |
| SAN DIEGO | 2020 | T6 instate heavy | Aggregate | Aggregate | DSL | 370814.2143 | 38.42598153 |
| SAN DIEGO | 2020 | T6 instate small | Aggregate | Aggregate | DSL | 523210.0131 | 56.80603168 |
| SAN DIEGO | 2020 | T6 OOS heavy | Aggregate | Aggregate | DSL | 9428.75273 | 0.873618393 |
| SAN DIEGO | 2020 | T6 OOS small | Aggregate | Aggregate | DSL | 1341.42863 | 0.131806263 |
| SAN DIEGO | 2020 | T6 Public | Aggregate | Aggregate | DSL | 36936.85711 | 5.174045864 |
| SAN DIEGO | 2020 | T6 utility | Aggregate | Aggregate | DSL | 5249.753858 | 0.607241363 |
| SAN DIEGO | 2020 | T6TS | Aggregate | Aggregate | GAS | 195204.5338 | 41.57062483 |
| SAN DIEGO | 2020 | T7 Ag | Aggregate | Aggregate | DSL | 255.784239 | 0.044265011 |
| SAN DIEGO | 2020 | T7 CAIRP | Aggregate | Aggregate | DSL | 327143.2642 | 49.76341782 |
| SAN DIEGO | 2020 | T7 CAIRP construction | Aggregate | Aggregate | DSL | 30998.48445 | 5.481493994 |
| SAN DIEGO | 2020 | T7 NNOOS | Aggregate | Aggregate | DSL | 398811.8687 | 58.9283554 |
| SAN DIEGO | 2020 | T7 NOOS | Aggregate | Aggregate | DSL | 128530.4223 | 20.00499118 |
| SAN DIEGO | 2020 | T7 other port | Aggregate | Aggregate | DSL | 82672.70002 | 15.36936387 |
| SAN DIEGO | 2020 | T7 POLA | Aggregate | Aggregate | DSL | 27497.39659 | 5.351699812 |
| SAN DIEGO | 2020 | T7 Public | Aggregate | Aggregate | DSL | 29982.85144 | 5.990040079 |
| SAN DIEGO | 2020 | T7 Single | Aggregate | Aggregate | DSL | 135971.463 | 23.14854336 |
| SAN DIEGO | 2020 | T7 single construction | Aggregate | Aggregate | DSL | 76901.53837 | 14.70836138 |
| SAN DIEGO | 2020 | T7 SWCV | Aggregate | Aggregate | DSL | 27968.69677 | 12.61284862 |
| SAN DIEGO | 2020 | T7 SWCV | Aggregate | Aggregate | NG | 30816.14015 | 12.76763706 |
| SAN DIEGO | 2020 | T7 tractor | Aggregate | Aggregate | DSL | 473298.431 | 67.08091711 |
| SAN DIEGO | 2020 | T7 tractor construction | Aggregate | Aggregate | DSL | 63436.99868 | 12.1879921 |
| SAN DIEGO | 2020 | T7 utility | Aggregate | Aggregate | DSL | 2530.334841 | 0.451050595 |
| SAN DIEGO | 2020 | T7IS | Aggregate | Aggregate | GAS | 1996.634505 | 0.512469279 |
| SAN DIEGO | 2020 | UBUS | Aggregate | Aggregate | GAS | 39098.4161 | 7.243801944 |
| SAN DIEGO | 2020 | UBUS | Aggregate | Aggregate | DSL | 2628.078835 | 0.555482686 |
| SAN DIEGO | 2020 | UBUS | Aggregate | Aggregate | NG | 109590.6686 | 28.62554402 |

Appendix E1

Noise Calculations

Appendix E

Noise and Vibration Impact Analysis

1. Noise Calculations
2. Vibration Calculations

Appendix E
Noise and Vibration Impact Analysis
1. Noise Calculations

Project: CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT

Construction Noise Impact on Sensitive Receptors



Parameters

| | |
|---------------------|-----------------------------------|
| Construction Hours: | 8 Daytime hours (7 am to 7 pm) |
| | 0 Evening hours (7 pm to 10 pm) |
| | 0 Nighttime hours (10 pm to 7 am) |
| Leq to L8 factor | 3 |

| Construction Phase Equipment Type | No. of Equip. | Reference Noise Level at 50ft. Lmax | Acoustical Usage Factor | Unmitigated - Residence | | | | Mitigated 1 - Residence | | | | Mitigated 2 - Residence | | | | Distance - Residence | | | |
|--------------------------------------|------------------|-------------------------------------------|----------------------------|--------------------------------------|-----------|-----|----|--------------------------------------|-----------|-----|----|--------------------------------------|-----------|-----|----|--------------------------------------|-----------|-----|----|
| | | | | Estimated Noise Shielding, dBA | | | | Estimated Noise Shielding, dBA | | | | Estimated Noise Shielding, dBA | | | | Estimated Noise Shielding, dBA | | | |
| | | | | Distance (ft) | Lmax | Leq | L8 | Distance (ft) | Lmax | Leq | L8 | Distance (ft) | Lmax | Leq | L8 | Distance (ft) | Lmax | Leq | L8 |
| Demolition | | | | 86 | 81 | | | 81 | 76 | | | 79 | 74 | | | 79 | 74 | | |
| Concrete Saw | 1 | 90 | 20% | 75 | 86 | 79 | 82 | 75 | 81 | 74 | 77 | 75 | 79 | 72 | 75 | 95 | 79 | 72 | 75 |
| Dozer | 1 | 82 | 40% | 75 | 78 | 74 | 77 | 75 | 73 | 69 | 72 | 75 | 71 | 67 | 70 | 95 | 71 | 67 | 70 |
| Tractor/Loader/Backhoe | 2 | 80 | 25% | 75 | 79 | 73 | 76 | 75 | 74 | 68 | 71 | 75 | 72 | 66 | 69 | 95 | 72 | 66 | 69 |
| Site Preparation | | | | 81 | 78 | | | 76 | 73 | | | 74 | 71 | | | 74 | 71 | | |
| Graders | 1 | 85 | 40% | 75 | 81 | 77 | 80 | 75 | 76 | 72 | 75 | 75 | 74 | 70 | 73 | 95 | 74 | 70 | 73 |
| Tractor/Loader/Backhoe | 1 | 80 | 25% | 75 | 76 | 70 | 73 | 75 | 71 | 65 | 68 | 75 | 69 | 63 | 66 | 95 | 69 | 63 | 66 |
| Grading/Excavation | | | | 86 | 81 | | | 81 | 76 | | | 79 | 74 | | | 79 | 74 | | |
| Concrete Saw | 1 | 90 | 20% | 75 | 86 | 79 | 82 | 75 | 81 | 74 | 77 | 75 | 79 | 72 | 75 | 95 | 79 | 72 | 75 |
| dozer | 1 | 82 | 40% | 75 | 78 | 74 | 77 | 75 | 73 | 69 | 72 | 75 | 71 | 67 | 70 | 95 | 71 | 67 | 70 |
| Tractor/Loader/Backhoe | 2 | 80 | 25% | 75 | 79 | 73 | 76 | 75 | 74 | 68 | 71 | 75 | 72 | 66 | 69 | 95 | 72 | 66 | 69 |
| Building Construction | | | | 79 | 75 | | | 74 | 70 | | | 72 | 68 | | | 72 | 68 | | |
| Cranes | 1 | 81 | 16% | 75 | 77 | 70 | 73 | 75 | 72 | 65 | 68 | 75 | 70 | 63 | 66 | 95 | 70 | 62 | 65 |
| Forklift | 2 | 75 | 10% | 75 | 74 | 64 | 67 | 75 | 69 | 59 | 62 | 75 | 67 | 57 | 60 | 95 | 67 | 57 | 60 |
| Tractor/Loader/Backhoe | 2 | 80 | 25% | 75 | 79 | 73 | 76 | 75 | 74 | 68 | 71 | 75 | 72 | 66 | 69 | 95 | 72 | 66 | 69 |
| Paving | | | | 81 | 79 | | | 76 | 74 | | | 74 | 72 | | | 74 | 72 | | |
| cement and mortar mixers | 4 | 79 | 40% | 75 | 81 | 78 | 81 | 75 | 76 | 73 | 76 | 75 | 74 | 71 | 74 | 95 | 74 | 70 | 73 |
| Paver | 1 | 77 | 50% | 75 | 73 | 70 | 73 | 75 | 68 | 65 | 68 | 75 | 66 | 63 | 66 | 95 | 66 | 63 | 66 |
| Roller | 1 | 80 | 20% | 75 | 76 | 69 | 72 | 75 | 71 | 64 | 67 | 75 | 69 | 62 | 65 | 95 | 69 | 62 | 65 |
| Tractor/Loader/Backhoe | 1 | 80 | 25% | 75 | 76 | 70 | 73 | 75 | 71 | 65 | 68 | 75 | 69 | 63 | 66 | 95 | 69 | 63 | 66 |
| Architectural Coating | | | | 74 | 70 | | | 69 | 65 | | | 67 | 63 | | | 67 | 63 | | |
| Air Compressor | 1 | 78 | 40% | 75 | 74 | 70 | 73 | 75 | 69 | 65 | 68 | 75 | 67 | 63 | 66 | 95 | 67 | 63 | 66 |

Maximum Noise Level (Overlapping Phases)

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Project: CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT
Construction Noise Impact on Sensitive Receptors



Parameters

| | |
|---------------------|--------------------------------------------------------------------------------------------------------|
| Construction Hours: | 8 Daytime hours (7 am to 7 pm) 0 Evening hours (7 pm to 10 pm) 0 Nighttime hours (10 pm to 7 am) |
| Leq to L8 factor | 3 |

| | | | | Unmitigated - Park - building/Playground | | | | | Mitigation 1 - Park | | | | | Mitigation 2 - Park | | | | | Distance - Park | | | | |
|--------------------------------------|------------------|-------------------------------------------|----------------------------|------------------------------------------|-----------|-----------|----|--------------------------------------|---------------------|-----------|-----------|----|--------------------------------------|---------------------|-----------|-----------|----|--------------------------------------|-----------------|-----------|-----------|----|--------------------------------------|
| Construction Phase Equipment Type | No. of Equip. | Reference Noise Level at 50ft, Lmax | Acoustical Usage Factor | Distance (ft) | Lmax | Leq | L8 | Estimated Noise Shielding, dBA | Distance (ft) | Lmax | Leq | L8 | Estimated Noise Shielding, dBA | Distance (ft) | Lmax | Leq | L8 | Estimated Noise Shielding, dBA | Distance (ft) | Lmax | Leq | L8 | Estimated Noise Shielding, dBA |
| Demolition | | | | | 86 | 81 | | | | 81 | 76 | | | | 79 | 74 | | | | 79 | 74 | | |
| Concrete Saw | 1 | 90 | 20% | 80 | 86 | 79 | 82 | 0 | 80 | 81 | 74 | 77 | 5 | 80 | 79 | 72 | 75 | 7 | 95 | 79 | 72 | 75 | 5 |
| Dozer | 1 | 82 | 40% | 80 | 78 | 74 | 77 | 0 | 80 | 73 | 69 | 72 | 5 | 80 | 71 | 67 | 70 | 7 | 95 | 71 | 67 | 70 | 5 |
| Tractor/Loader/Backhoe | 2 | 80 | 25% | 80 | 79 | 73 | 76 | 0 | 80 | 74 | 68 | 71 | 5 | 80 | 72 | 66 | 69 | 7 | 95 | 72 | 66 | 69 | 5 |
| Site Preparation | | | | | 81 | 78 | | | | 76 | 73 | | | | 74 | 71 | | | | 74 | 71 | | |
| Graders | 1 | 85 | 40% | 80 | 81 | 77 | 80 | 0 | 80 | 76 | 72 | 75 | 5 | 80 | 74 | 70 | 73 | 7 | 95 | 74 | 70 | 73 | 5 |
| Tractor/Loader/Backhoe | 1 | 80 | 25% | 80 | 76 | 70 | 73 | 0 | 80 | 71 | 65 | 68 | 5 | 80 | 69 | 63 | 66 | 7 | 95 | 69 | 63 | 66 | 5 |
| Grading/Excavation | | | | | 86 | 81 | | | | 81 | 76 | | | | 79 | 74 | | | | 79 | 74 | | |
| Concrete Saw | 1 | 90 | 20% | 80 | 86 | 79 | 82 | 0 | 80 | 81 | 74 | 77 | 5 | 80 | 79 | 72 | 75 | 7 | 95 | 79 | 72 | 75 | 5 |
| Dozer | 1 | 82 | 40% | 80 | 78 | 74 | 77 | 0 | 80 | 73 | 69 | 72 | 5 | 80 | 71 | 67 | 70 | 7 | 95 | 71 | 67 | 70 | 5 |
| Tractor/Loader/Backhoe | 2 | 80 | 25% | 80 | 79 | 73 | 76 | 0 | 80 | 74 | 68 | 71 | 5 | 80 | 72 | 66 | 69 | 7 | 95 | 72 | 66 | 69 | 5 |
| Building Construction | | | | | 79 | 75 | | | | 74 | 70 | | | | 72 | 68 | | | | 72 | 68 | | |
| Cranes | 1 | 81 | 16% | 80 | 77 | 69 | 72 | 0 | 80 | 72 | 64 | 67 | 5 | 80 | 70 | 62 | 65 | 7 | 95 | 70 | 62 | 65 | 5 |
| Forklift | 2 | 75 | 10% | 80 | 74 | 64 | 67 | 0 | 80 | 69 | 59 | 62 | 5 | 80 | 67 | 57 | 60 | 7 | 95 | 67 | 57 | 60 | 5 |
| Tractor/Loader/Backhoe | 2 | 80 | 25% | 80 | 79 | 73 | 76 | 0 | 80 | 74 | 68 | 71 | 5 | 80 | 72 | 66 | 69 | 7 | 95 | 72 | 66 | 69 | 5 |
| Paving | | | | | 81 | 79 | | | | 76 | 74 | | | | 74 | 72 | | | | 74 | 72 | | |
| cement and mortar mixers | 4 | 79 | 40% | 80 | 81 | 77 | 80 | 0 | 80 | 76 | 72 | 75 | 5 | 80 | 74 | 70 | 73 | 7 | 95 | 74 | 70 | 73 | 5 |
| Paver | 1 | 77 | 50% | 80 | 73 | 70 | 73 | 0 | 80 | 68 | 65 | 68 | 5 | 80 | 66 | 63 | 66 | 7 | 95 | 66 | 63 | 66 | 5 |
| Roller | 1 | 80 | 20% | 80 | 76 | 69 | 72 | 0 | 80 | 71 | 64 | 67 | 5 | 80 | 69 | 62 | 65 | 7 | 95 | 69 | 62 | 65 | 5 |
| Tractor/Loader/Backhoe | 1 | 80 | 25% | 80 | 76 | 70 | 73 | 0 | 80 | 71 | 65 | 68 | 5 | 80 | 69 | 63 | 66 | 7 | 95 | 69 | 63 | 66 | 5 |
| Architectural Coating | | | | | 74 | 70 | | | | 69 | 65 | | | | 67 | 63 | | | | 67 | 63 | | |
| Air Compressor | 1 | 78 | 40% | 80 | 74 | 70 | 73 | 0 | 80 | 69 | 65 | 68 | 5 | 80 | 67 | 63 | 66 | 7 | 95 | 67 | 63 | 66 | 5 |

Maximum Noise Level (Overlapping Phases)

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Appendix D
Noise and Vibration Impact Analysis
2. Vibration Calculations

Project: CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT

Table I. Off-Site Structural Vibration Impacts

| Receptor | Type of Building | Equipment | Reference Distance | Reference Level ^a | Distance to Receptor (ft) ^b | Impact Level | Threshold | Exceeds Threshold? |
|----------------------------------|------------------|---------------------|--------------------|------------------------------|----------------------------------------|--------------|--------------|--------------------|
| | | | | PPV (in/sec) | | PPV (in/sec) | PPV (in/sec) | |
| Residences along San Miguel Road | Category I | Bulldozer or Bore/D | 25 | 0.089 | 75 | 0.02 | 0.12 | No |
| | | Loaded Trucks | 25 | 0.076 | 75 | 0.01 | 0.12 | No |
| | | Small Bulldozer | 25 | 0.003 | 75 | 0.00 | 0.12 | No |
| Campground - Unmitigated | Category I | Bulldozer or Bore/D | 25 | 0.089 | 60 | 0.024 | 0.12 | No |
| | | Loaded Trucks | 25 | 0.076 | 60 | 0.020 | 0.12 | No |
| | | Small Bulldozer | 25 | 0.003 | 60 | 0.001 | 0.12 | No |

Table I. Off-Site Structural Vibration Impacts

| Receptor | Type of Building | Equipment | Reference Distance | Distance to Receptor (ft) ^b | Impact Level | Threshold | Exceeds Threshold ? |
|----------------------------------|------------------|---------------------|--------------------|----------------------------------------|--------------|-----------|---------------------|
| | | | | | Vdb | Vdb | |
| Residences along San Miguel Road | Category I | Bulldozer or Bore/D | 25 | 75 | 72.63 | 85.00 | No |
| | | Loaded Trucks | 25 | 75 | 71.26 | 85.00 | No |
| | | Small Bulldozer | 25 | 75 | 43.19 | 85.00 | No |
| Campground - Unmitigated | Category I | Bulldozer or Bore/D | 25 | 60 | 75.54 | 85.00 | No |
| | | Loaded Trucks | 25 | 60 | 74.17 | 85.00 | No |
| | | Small Bulldozer | 25 | 60 | 46.09 | 85.00 | No |

Notes:

a. Vibration reference levels and impact criteria taken from FTA Noise and Vibration Impact Assessment (2006), Tables 8-1, 12-2, and 12-3

b. Distances represent the closest measurement from project building footprint to closest building footprint in each direction

CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT

Vibration Level Calculations

Based on Federal Transit Administration, Office of Planning and Environment

N = 1.5

| Construction Equipment | Project Equipment | Equipment Peak Particle Velocity @ 25 Feet* (inches/second) | Distance to Receptor for < 0.5 PPV (Feet) | Estimated Velocity Decibels @ Distance** (VdB) | Estimated Peak Particle Velocity @ Distance*** (inches/second) |
|-------------------------------------|-------------------|-------------------------------------------------------------|-------------------------------------------|------------------------------------------------|----------------------------------------------------------------|
| Vibration Levels | | | | | |
| Pile Driver (Impact - Upper Range) | | 1.518 | 5 | 0 | 0.000 |
| Pile Driver (Impact - Typical) | | 0.644 | 5 | 0 | 0.000 |
| Pile Driver (Sonic - Upper Range) | | 0.734 | 5 | 0 | 0.000 |
| Pile Driver (Sonic - Typical) | | 0.170 | 5 | 0 | 0.000 |
| Clam Shovel Drop (Slurry Wall) | | 0.202 | 5 | 0 | 0.000 |
| Hydromill (Slurry Wall - In Soil) | | 0.008 | 5 | 0 | 0.000 |
| Hydromill (Slurry Wall - In Rock) | | 0.017 | 5 | 0 | 0.000 |
| Vibratory Roller | | 0.210 | 5 | 0 | 0.000 |
| Hoe Ram | | 0.089 | 5 | 0 | 0.000 |
| Large Bulldozer | | 0.089 | 5 | 0 | 0.000 |
| Caisson Drilling | | 0.089 | 5 | 0 | 0.000 |
| Loaded Trucks | | 0.076 | 50 | 0 | 0.000 |
| Jackhammer | | 0.035 | 5 | 0 | 0.000 |
| Small Bulldozer | | 0.003 | 5 | 0 | 0.000 |
| Unmitigated Vibration Levels | | | | | |
| Residences | | | | | |
| Large Bulldozer or Bore/Drill Rig | Yes | 0.089 | 75 | 72.6 | 0.017 |
| Loaded Trucks | Yes | 0.076 | 75 | 71.3 | 0.015 |
| Small Bulldozer | Yes | 0.003 | 75 | 43.2 | 0.001 |
| Park/Campground | | | | | |
| Large Bulldozer or Bore/Drill Rig | Yes | 0.089 | 60 | 75.5 | 0.024 |
| Loaded Trucks | Yes | 0.076 | 60 | 74.2 | 0.020 |
| Small Bulldozer | Yes | 0.003 | 60 | 46.1 | 0.001 |

Source:

Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.

Notes:

* Values taken from Table 7-4.

** Based on the formula $VdB = 20 \times \log_{10} (v/v_{ref})$, where v_{ref} is equal to 1×10^{-6} in/sec (see page 111).

The approximate rms vibration velocity level (v) is calculated from PPV using a crest factor of 4 (see page 184).

*** Based on the formula $PPV(D) = PPV(25 \text{ ft}) \times (25/D)^N$, where D is equal to the distance (see page 185).

N = soil type classification factor (typically ranges from 1 to 1.5)

Off-Site Construction Haul Trucks

| Equipment | Reference Vibration Levels at 50 ft, in/sec PPV | Estimated Vibration Levels, in/sec PPV | |
|----------------------|-------------------------------------------------|----------------------------------------|--|
| | | 20 ft | |
| Typical Road Surface | 0.00565 | 0.071 | |

Ref. Levels based on FTA Figure 5-4 (converted from VdB to PPV)

Appendix F

Transportation Impact Analysis

TRANSPORTATION IMPACT ANALYSIS
**CENTRAL-WHEELER TANK AND SYSTEM
IMPROVEMENTS PROJECT**
Sweetwater Authority, California
October, 2019

LLG Ref. 3-18-3030

Prepared by:
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TABLE OF CONTENTS

| SECTION | PAGE |
|------------------------------------------------------------------------|-----------|
| Appendices..... | ii |
| List of Figures..... | iii |
| List of Tables | iii |
| 1.0 Introduction..... | 1 |
| 2.0 Project Description | 2 |
| 2.1 Project Location | 2 |
| 2.2 Project Description..... | 2 |
| 2.2.1 Central-Wheeler Tank (CWT) | 2 |
| 2.2.2 Water Transmission Mains | 2 |
| 2.3 Project Construction..... | 2 |
| 2.3.1 Central-Wheeler Tank..... | 2 |
| 2.3.2 Water Mains..... | 2 |
| 2.3.3 Construction Staging and Access..... | 3 |
| 2.4 Project Operation and Maintenance..... | 3 |
| 2.5 Permits and Approvals..... | 3 |
| 3.0 Existing Conditions..... | 5 |
| 3.1 Existing Street Network..... | 5 |
| 3.2 Existing Bicycle Network..... | 5 |
| 3.3 Existing Pedestrian Conditions | 5 |
| 3.4 Existing Transit Conditions | 5 |
| 3.5 Existing Traffic Volumes..... | 5 |
| 4.0 Project Study Area, Analysis Approach and Methodology | 9 |
| 4.1 Study Area | 9 |
| 4.2 Analysis Scenarios..... | 9 |
| 4.3 Methodology | 9 |
| 4.3.1 Signalized Intersections | 10 |
| 4.3.2 Unsignalized Intersections | 11 |
| 4.4 Street Segments..... | 12 |
| 5.0 Significance Criteria | 14 |
| 5.1.1 Road Segments..... | 14 |
| 5.1.2 Intersections | 15 |
| 6.0 Trip Generation/Distribution/Assignment | 17 |

TABLE OF CONTENTS (CONTINUED)

| SECTION | PAGE |
|-------------------------------------------------------------------|-----------|
| 6.1 Trip Generation | 17 |
| 6.1.1 Daily Trucks and Workers | 17 |
| 6.1.2 Passenger Car Equivalence | 17 |
| 6.2 Trip Distribution/Assignment | 17 |
| 7.0 Analysis of Existing Conditions | 22 |
| 7.1 Peak Hour Intersection Levels of Service | 22 |
| 7.2 Daily Street Segment Levels of Service | 22 |
| 8.0 Construction Year (2020) Traffic | 23 |
| 8.1 Traffic Volumes | 23 |
| 9.0 Analysis of Construction Year Scenarios | 26 |
| 9.1 Construction Year without Project | 26 |
| 9.1.1 Intersection Analysis | 26 |
| 9.1.2 Daily Street Segment Levels of Service | 26 |
| 9.2 Construction Year with Project | 26 |
| 9.2.1 Intersection Analysis | 26 |
| 9.2.2 Daily Street Segment Levels of Service | 26 |
| 10.0 Significance of Impacts and Mitigation Measures | 28 |

APPENDICES

| APPENDIX |
|----------------------------------------------------------------------------------------|
| A. Intersection and Segment Manual Count Sheets |
| B. Peak Hour Intersection Analysis Worksheets - Existing |
| C. Peak Hour Intersection Analysis Worksheets – Construction Year 2020 Without Project |
| D. Peak Hour Intersection Analysis Worksheets – Construction Year 2020 with Project |

LIST OF FIGURES

| SECTION—FIGURE # | FOLLOWING PAGE |
|----------------------------------------------------------------------------|----------------|
| Figure 2–1 Central Wheeler Water Tank and Pipeline Project Components..... | 4 |
| Figure 3–1 Existing Conditions Diagram..... | 7 |
| Figure 3–2 Existing Traffic Volumes..... | 8 |
| Figure 6–1 Project Truck Traffic Distribution | 19 |
| Figure 6–2 Project Workers Traffic Distribution | 20 |
| Figure 6–3 Project Traffic Volumes..... | 21 |
| Figure 8–1 Construction Year without Project Traffic Volumes | 24 |
| Figure 8–2 Construction Year with Project Traffic Volumes | 25 |

LIST OF TABLES

| SECTION—TABLE # | PAGE |
|------------------------------------------------------------------------------------------|------|
| Table 3–1 Existing Traffic Volumes..... | 6 |
| Table 4–1 Intersection Level of Service Descriptions | 10 |
| Table 4–2 Intersection Level of Service (LOS) & Delay Ranges | 11 |
| Table 4–3 Average Daily Vehicle Trips – County of San Diego | 13 |
| Table 5–1 Measures of Significant Project Impacts to Mobility Element Road Segments..... | 14 |
| Table 5–2 Measures of Significant Project Impacts to Intersections..... | 16 |
| Table 6–1 Construction Traffic Trip Generation | 18 |
| Table 7–1 Existing Intersection Operations..... | 22 |
| Table 7–2 Existing Street Segment Operations | 22 |
| Table 9–1 Construction Year Intersection Operations..... | 27 |
| Table 9–2 Construction Year Street Segment Operations | 27 |

TRANSPORTATION IMPACT ANALYSIS
CENTRAL-WHEELER TANK AND SYSTEM IMPROVEMENTS PROJECT
Sweetwater Authority, California
October, 2019

1.0 INTRODUCTION

Sweetwater Authority (Authority), the Lead Agency pursuant to the California Environmental Quality Act (CEQA), is proposing to construct the Central-Wheeler Tank and System Improvements Project (proposed Project) to improve reliability of water distribution within the Wheeler Pressure Zone and a portion currently served by the Gravity Pressure Zone. The proposed Project would involve the construction and operation of an 0.8 Million Gallon (MG) welded-steel water tank (Central-Wheeler Tank or CWT) and construction of associated water drainage and conveyance pipelines.

The purpose of this traffic study is to analyze the operations of the study area intersections and segments during construction to determine significant impacts, if any, due to the increased traffic, and recommends any necessary mitigation measures. As explained elsewhere in this study, the daily traffic generated during construction is low at 164 trips and the daily traffic during maintenance is minimal.

This traffic study includes the following:

- Project Description
- Existing Conditions
- Analysis Approach and Methodology
- Significance Criteria
- Trip Generation/Distribution/Assignment
- Analysis of Existing Conditions
- Construction Year (2020) Traffic forecasts
- Analysis of Construction Year operations
- Significance of Impacts and Mitigation Measures

2.0 PROJECT DESCRIPTION

2.1 Project Location

The proposed Project is located in the unincorporated community of Sunnyside in San Diego County, California, just east of the unincorporated community of Bonita, approximately 9 miles east from downtown San Diego, and 6 miles northeast of downtown Chula Vista. The closest highway to the proposed Project site is State Route (SR) 125. The Sweetwater Summit Regional Park, Sweetwater Reservoir, Sweetwater Reservoir's Fishing Program, and a trail system within Sweetwater Reservoir property can be accessed from this intersection.

Figure 2 depicts the various components of the proposed Central Wheeler Water Tank and Systems Improvements Project.

2.2 Project Description

2.2.1 Central-Wheeler Tank (CWT)

The new 0.8 MG water storage tank would be constructed within a hillside in an undeveloped portion of land owned by the Authority. To access the CWT, the Authority would add an additional 400 feet long and no more than 20 feet wide road segment to the existing maintenance road network. A ring maintenance driveway around the tank would be asphalt-paved and 16 feet wide.

2.2.2 Water Transmission Mains

The proposed Project would include the installation of two sections of 16-inch diameter polyvinyl chloride (PVC) water main: one, approximately 570 feet in length that would connect the CWT to an existing water main along Summit Meadow Road and the second, approximately 1,030 feet in length, would be installed within the public right-of-way along San Miguel Road to connect to existing water mains at San Miguel Road. Additionally, the proposed Project would include a 12-inch-diameter PVC drain pipeline approximately 615 feet in length that would connect to the CWT overflow air gap and tank drain structure.

2.3 Project Construction

2.3.1 Central-Wheeler Tank

The proposed Project construction would take place for approximately nine months and it is anticipated to start in the year 2020. In general, construction activities would occur between 7:00 a.m. and 5:00 p.m., Monday through Friday, except on federal holidays.

2.3.2 Water Mains

The construction corridor would be wide enough to accommodate the trench and to allow for secondary staging and vehicle access. Traffic control would be necessary during water main construction within the roadways. The traffic control plan for the proposed Project would be prepared by the Contractor and coordinated with the County of San Diego.

Trenches would be temporarily closed by covering them with steel plates. The construction equipment would generally include backhoes, excavators, dump trucks, concrete mixer, water truck,

crane, bulldozer, steam roller, and plate compactor. Once pipelines are installed, the disturbed area would be restored to pre-construction conditions.

2.3.3 Construction Staging and Access

Primary staging for the proposed Project may occur within the Clean Fill Site. During water main construction, the Contractor may also choose secondary staging locations along Summit Meadow and San Miguel Roads within already disturbed areas. While all staging of materials would occur in already disturbed areas, staging areas noted above are for discussion purposes only as the contractor would ultimately select staging areas. The Contractor would be required to develop and submit a site access plan for review and approval by the Authority.

The primary travel routes to the proposed Project site would be from SR-125 to either Paradise Valley Road exit or San Miguel Ranch Road exit, or from SR-54 through Bonita. Access within the Project boundary for construction equipment and workers would be through the existing maintenance road network located within the Sweetwater Reservoir property (Figure 2). To access the tank, a road segment will be added to the existing maintenance road network.

It is anticipated that because of security requirements, each work-day morning the crews would be required to check in and sign in by accessing the Clean Fill Site and potential secondary staging areas by Summit Meadow Road and San Miguel Road. The crews would then proceed to the work site using the existing public roads and maintenance roads located in the vicinity of the proposed Project.

2.4 Project Operation and Maintenance

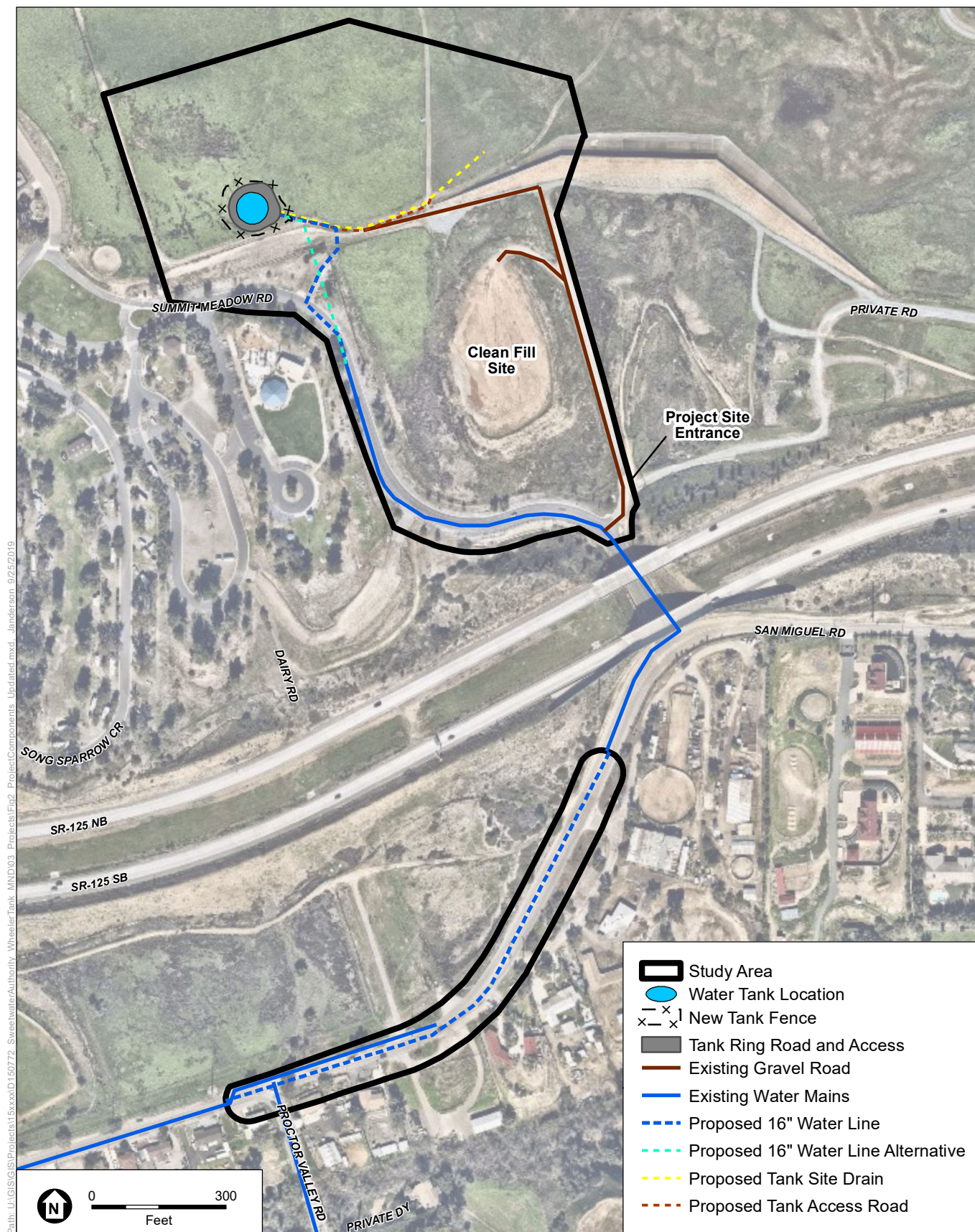
Operation of the proposed Project would not require daily staffing but would require periodic maintenance. Maintenance activities may include, but are not limited to, replacement of non-operational machinery and inspection and maintenance of all structures. Access for periodic monitoring and maintenance of the CWT would be provided by the existing and proposed CWT maintenance roads and driveway. Maintenance roads and other facilities will be maintained following industry standards. Once established, the maintenance road would not exceed a width of 20 feet.

2.5 Permits and Approvals

Potential regulatory agencies that may have approval requirements are identified in Table 1, and this list may be expanded for individual activities.

**TABLE 1
REGULATORY REQUIREMENTS AND AUTHORIZATIONS**

| Agency | Type of Approval |
|------------------------------------------------|---------------------------------------------------------------|
| State Water Resources Control Board | Statewide Construction General Permit |
| San Diego Regional Water Quality Control Board | Statewide General Permit for Drinking Water System Discharges |
| County of San Diego | Encroachment Permit |



SOURCE: Digital Globe 2017; ESA 2018; Sweetwater Authority 2018

Sweetwater Central Wheeler Tank and System Improvements Project

Figure 2
Project Components

3.0 EXISTING CONDITIONS

Effective evaluation of the traffic impacts associated with the proposed Project requires an understanding of the existing transportation system within the project area. *Figure 3–1* shows an existing conditions diagram, including intersections and lane configurations.

3.1 Existing Street Network

The following is a description of the existing street network in the study area.

San Miguel Road is a two-lane Non-Mobility Local Public Road in San Diego County. East of Proctor Valley Road, the land use on the southside is mostly residential. Curb, gutter and sidewalks are not provided. Parking is permitted intermittently. The posted speed limit is 25 mph.

Summit Meadow Road is a two-lane Non-Mobility Local Public Road in San Diego County. Summit Meadow Road provides access to the Sweetwater Summit County Park with camping facilities and will serve as the primary access for the construction workers and construction equipment. Curb and gutter are provided, but sidewalks are not provided. The posted speed limit is 15 mph.

Proctor Valley Road is a two-lane Non-Mobility Local Public Road in San Diego County. Curb, gutter and sidewalk are not provided.

San Miguel Ranch Road is a four-lane divided road and is designated as a Class I Collector in the City of Chula Vista Mobility Element. Curb, gutter and sidewalks are provided. The posted speed limit is 45 mph.

3.2 Existing Bicycle Network

There are no bicycle facilities provided along the street segments within the study area.

3.3 Existing Pedestrian Conditions

Sidewalks are not provided along San Miguel Road and along Summit Meadow Road. However, an unpaved path is provided along Summit Meadow Road.

3.4 Existing Transit Conditions

There are no specific bus or trolley routes along San Miguel Road, Summit Meadow Road, Proctor Valley Road and San Miguel Ranch Road.

3.5 Existing Traffic Volumes

Table 3–1 is a summary of the most recent available average daily traffic volumes (ADTs) from LLG counts conducted on February 12, 2019. Manual hand counts at the study area intersections, including bicycle and pedestrian counts, were conducted on February 12, 2019.

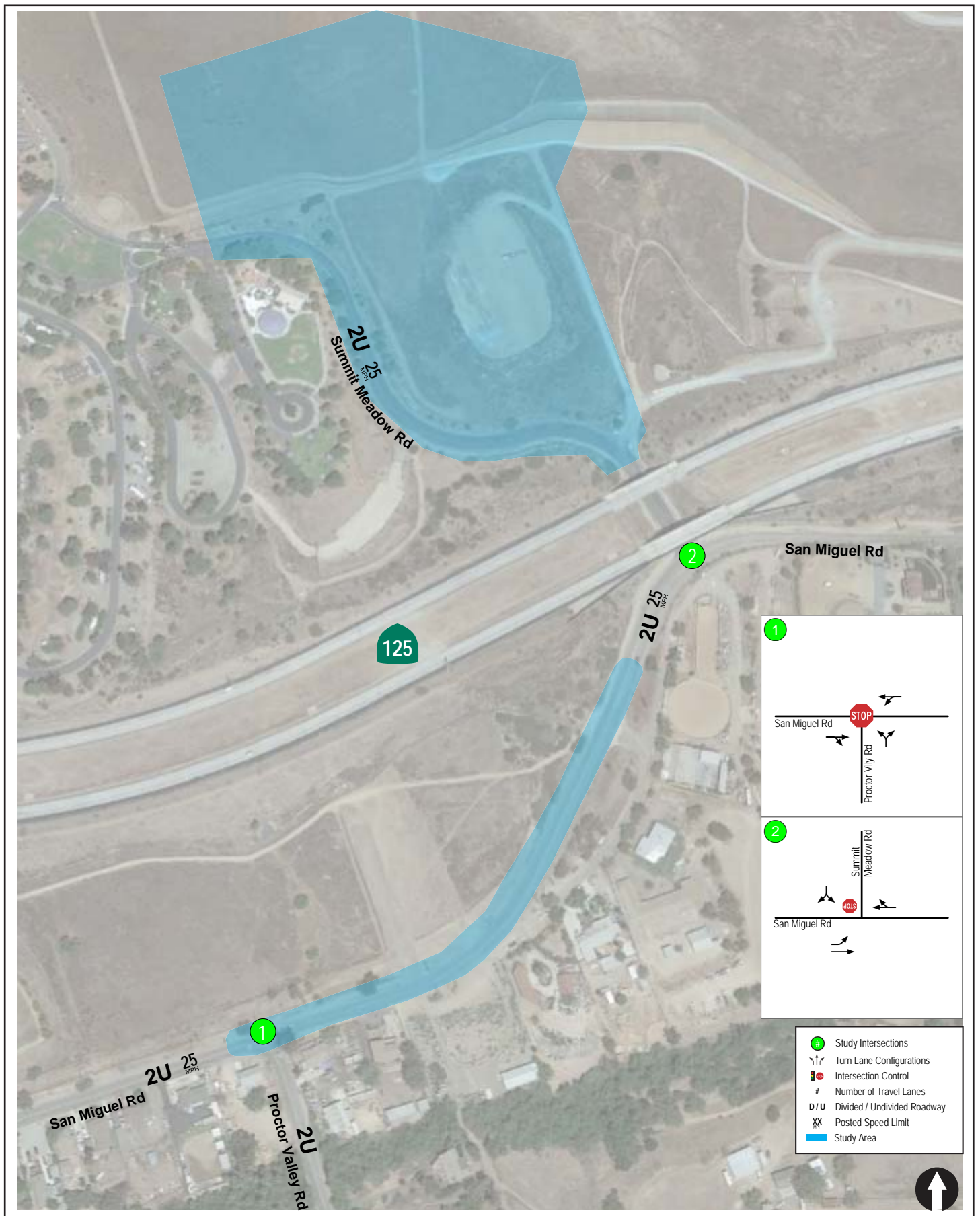
Figure 3–2 shows the Existing Traffic Volumes. *Appendix A* contains the manual count sheets.

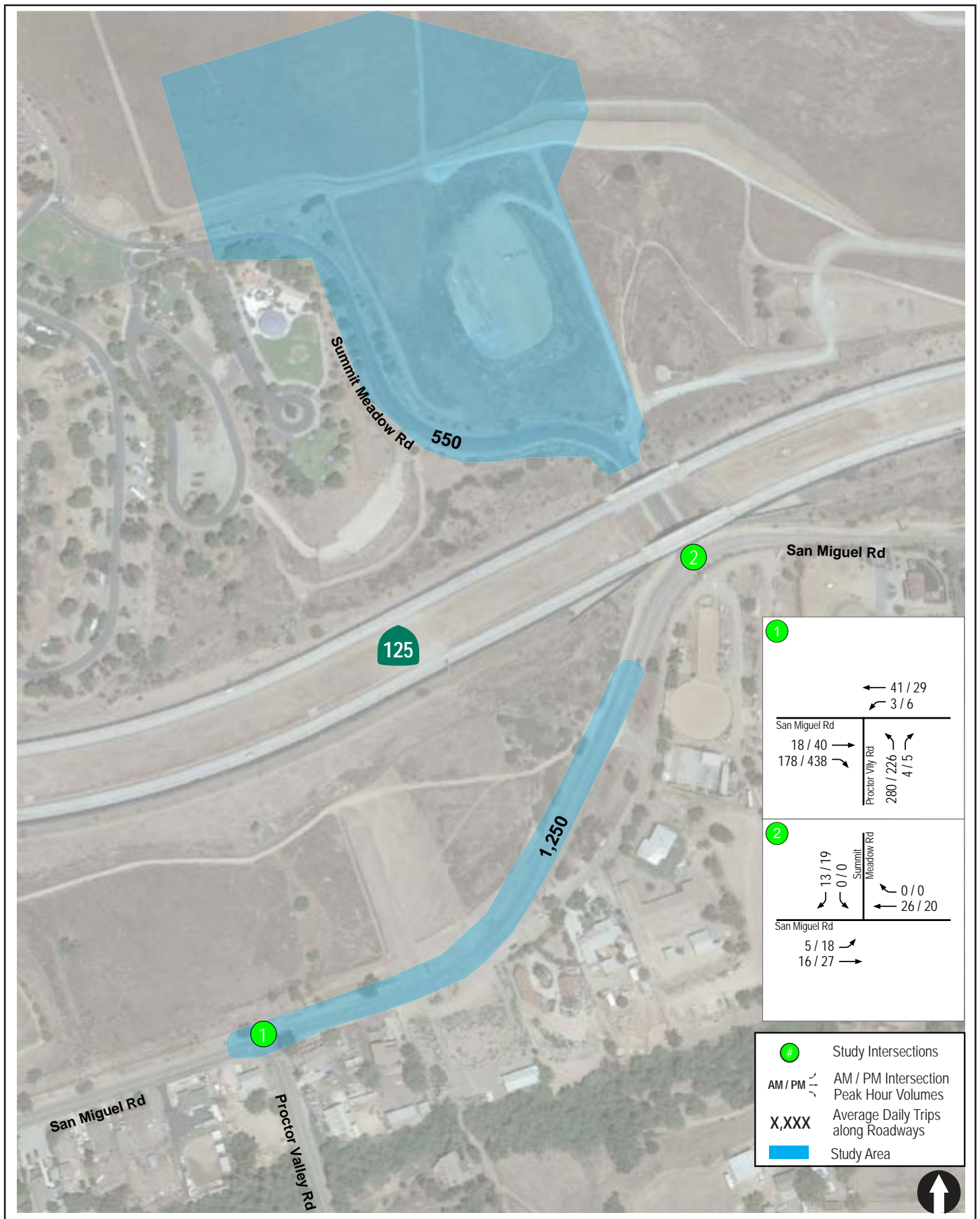
**TABLE 3-1
EXISTING TRAFFIC VOLUMES**

| Street Segment | ADT^a | Date |
|-----------------------------------------------------------------|------------------------|-------------------|
| San Miguel Road Proctor Valley Rd to Summit Meadow Rd | 1,250 | February 12, 2019 |
| Summit Meadow Road N/O San Miguel Rd | 550 | February 12, 2019 |

Footnotes:

- a. Average Daily Traffic Volumes.





4.0 PROJECT STUDY AREA, ANALYSIS APPROACH AND METHODOLOGY

4.1 Study Area

The Project study area was determined using the San Diego County criteria which require an analysis of transportation facilities that would receive 25 or more peak hour trips from the proposed Project. The 25 peak hour trip threshold is based on the combined two-way (i.e. both directions, two-way peak hour total) traffic volume of the roadway segment for either the AM or PM peak period. Based on this criterion the following intersections, street segments, freeway mainline segments and metered ramps were included in the study area.

INTERSECTIONS

1. Proctor Valley Road / San Miguel Road
2. Summit Meadow Road / San Miguel Road

SEGMENTS

1. **San Miguel Road:** Proctor Valley Road to Summit Meadow Road
2. **Summit Meadow Road:** N/O San Miguel Road

4.2 Analysis Scenarios

This traffic analysis assesses the above-mentioned key locations in the Project area in the following scenarios to determine the potential impacts to the road network:

- Existing
- Construction Year without Project
- Construction Year with Project

4.3 Methodology

There are various methodologies used to analyze signalized intersections, unsignalized intersections and street segments. The measure of effectiveness for intersection and segment operations is level of service (LOS) which denotes the operating conditions which occur at a given intersection or on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. LOS provides an index to the operational qualities of a roadway segment or an intersection. LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. LOS designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

In the Highway Capacity Manual (HCM) 6th Edition, LOS for signalized intersections is defined in terms of delay. The LOS analysis provides results in seconds of delay expressed in terms of letters A through F. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. **Table 4-1** summarizes the signalized intersections levels of service descriptions.

TABLE 4-1
INTERSECTION LEVEL OF SERVICE DESCRIPTIONS

| LOS | Description |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay. |
| B | Generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay. |
| C | Generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping. |
| D | Generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable. |
| E | Considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences. |
| F | Considered to be unacceptable to most drivers. This condition often occurs with over saturation i.e. when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume-to-capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels |

4.3.1 Signalized Intersections

Table 4-2 depicts the criteria, which are based on the average control delay for any particular minor movement (unsignalized intersections) and overall intersection (signalized intersections).

For signalized intersections, LOS criteria are stated in terms of the average control delay per vehicle for a 15-minute analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

LOS A describes operations with very low delay, (i.e. less than 10.0 seconds per vehicle). This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

LOS B describes operations with delay in the range 10.1 seconds and 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of Average delay.

LOS C describes operations with delay in the range 20.1 seconds and 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

TABLE 4-2
INTERSECTION LEVEL OF SERVICE (LOS) & DELAY RANGES

| LOS | Delay (seconds/vehicle) | |
|-----|--------------------------|----------------------------|
| | Signalized Intersections | Unsignalized Intersections |
| A | ≤ 10.0 | ≤ 10.0 |
| B | 10.1 to 20.0 | 10.1 to 15.0 |
| C | 20.1 to 35.0 | 15.1 to 25.0 |
| D | 35.1 to 55.0 | 25.1 to 35.0 |
| E | 55.1 to 80.0 | 35.1 to 50.0 |
| F | ≥ 80.1 | ≥ 50.1 |

Source: Highway Capacity Manual 6th Edition

LOS D describes operations with delay in the range 35.1 seconds and 55.0 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or higher v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are frequent.

LOS E describes operations with delay in the range of 55.1 seconds to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

LOS F describes operations with delay in excess of over 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

None of the study area intersections are signalized.

4.3.2 Unsignalized Intersections

For unsignalized intersections, LOS is determined by the computed or measured control delay and is defined for each minor movement. For All-Way-Stop-controlled (AWSC) intersections, the overall intersection delay is reported. For two-way-stop-controlled (TWSC) intersections, LOS is not defined for the intersection as a whole, but the worst-case movement (typically the minor street left-turn) delay and LOS are reported.

LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This LOS is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits.

LOS F may also appear in the form of side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

4.4 Street Segments

Street segment analysis for streets within the San Diego County is based upon the comparison of daily traffic volumes (ADTs) to the County of San Diego's *Roadway Classification, Level of Service, and ADT Table*. **Table 4-3** is the County of San Diego's *Average Daily Vehicle Trips* table. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics.

**TABLE 4-3
AVERAGE DAILY VEHICLE TRIPS – COUNTY OF SAN DIEGO**

| MOBILITY ELEMENT ROADS | | | LEVELS OF SERVICE | | | | |
|-------------------------------------|-------------------------------------|------------------|-------------------|---------|---------|---------|----------|
| Roadway Classification | | #of Travel Lanes | A | B | C | D | E |
| Expressway (6.1) | | 6 | <36,000 | <54,000 | <70,000 | <86,000 | <108,000 |
| Prime Arterial (6.2) | | 6 | <22,200 | <37,000 | <44,600 | <50,000 | <57,000 |
| Major Road | w/ Raised Median (4.1A) | 4 | <14,800 | <24,700 | <29,600 | <33,400 | <37,000 |
| | w/ Intermittent Turn Lanes (4.1B) | 4 | <13,700 | <22,800 | <27,400 | <30,800 | <34,200 |
| Boulevard | w/ Raised Median (4.2A) | 4 | <18,000 | <21,000 | <24,000 | <27,000 | <30,000 |
| | w/ Intermittent Turn Lanes (4.2B) | 4 | <16,800 | <19,600 | <22,500 | <25,000 | <28,000 |
| Community Collector | w/ Raised Median (2.1A) | 2 | <10,000 | <11,700 | <13,400 | <15,000 | <19,000 |
| | w/ Continuous Left-Turn Lane (2.1B) | 2 | <3,000 | <6,000 | <9,500 | <13,500 | <19,000 |
| | w/ Intermittent Turn Lanes (2.1C) | 2 | <3,000 | <6,000 | <9,500 | <13,500 | <19,000 |
| | w/ Passing Lane (2.1D) | 2 | <3,000 | <6,000 | <9,500 | <13,500 | <19,000 |
| | No Median (2.1E) | 2 | <1,900 | <4,100 | <7,100 | <10,900 | <16,200 |
| Light Collector | w/ Raised Median (2.2A) | 2 | <3,000 | <6,000 | <9,500 | <13,500 | <19,000 |
| | w/ Continuous Left-Turn Lane (2.2B) | 2 | <3,000 | <6,000 | <9,500 | <13,500 | <19,000 |
| | w/ Intermittent Turn Lanes (2.2C) | 2 | <3,000 | <6,000 | <9,500 | <13,500 | <19,000 |
| | W/ Passing Lane (2.2D) | 2 | <3,000 | <6,000 | <9,500 | <13,500 | <19,000 |
| | No Median (2.2E) | 2 | <1,900 | <4,100 | <7,100 | <10,900 | <16,200 |
| | w/ Reduced Shoulder (2.2F) | 2 | <5,800 | <6,800 | <7,800 | <8,700 | <9,700 |
| Minor Collector | w/ Raised Median (2.3A) | 2 | <3,000 | <6,000 | <7,000 | <8,000 | <9,000 |
| | w/ Intermittent (Turn Lane (2.3B) | 2 | <3,000 | <6,000 | <7,000 | <8,000 | <9,000 |
| | No Median (2.3C) | 2 | <1,900 | <4,100 | <6,000 | <7,000 | <8,000 |
| NON-MOBILITY ELEMENT ROADS ** | | | LEVELS OF SERVICE | | | | |
| Residential Collector | | 2 | - | - | <4,500 | - | - |
| Rural Residential Collector | | 2 | - | - | <4,500 | - | - |
| Residential Road | | 2 | - | - | <1,500 | - | - |
| Rural Residential Road | | 2 | - | - | <1,500 | - | - |
| Residential Cul-de-Sac or Loop Road | | 2 | - | - | <200 | - | - |

The values shown may be subject to adjustment based on the geometry of the roadway side frictions, and other relevant factors as determined by the Director, Department of Public Works.

**Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

***Rural Residential Collectors and Rural Residential Roads are intended to serve areas with lot sizes of 2 acres or more which do not have a demand for on-street parking. On-street parking is not assured for these cross sections. Additional right-of-way is needed if on-street parking is in paved area.

5.0 SIGNIFICANCE CRITERIA

The following criterion was utilized to evaluate potential significant impacts, based on the County's document: "*Guidelines for Determining Significance*" updated on August 24, 2011.

5.1.1 Road Segments

Pursuant to the County's General Plan Mobility Element Policy M2.1, new development must provide improvements or other measures to mitigate traffic impacts to avoid:

- a. Reduction in Level of Service (LOS) below "C" for on-site Mobility Element roads;
- b. Reduction in LOS below "D" for off-site and on-site abutting Mobility Element roads; and
- c. "Significantly impacting congestion" on roads that operate at LOS "E" or "F". If impacts cannot be mitigated, the project cannot be approved unless a statement of overriding considerations is made pursuant to the State CEQA Guidelines. However, the General Plan Mobility Element does not include specific guidelines for determining the amount of additional traffic that would "significantly impact congestion" on such roads.

The County has created the following guidelines to evaluate likely traffic impacts of a proposed project for road segments and intersections serving that project site, for purposes of determining whether the development would "significantly impact congestion" on the referenced LOS E and F roads. The guidelines are summarized in **Table 5-1**. The thresholds in *Table 5-1* are based upon average operating conditions on County roadways. It should be noted that these thresholds only establish general guidelines, and that the specific project location must be taken into account in conducting an analysis of traffic impact from new development.

TABLE 5-1
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO MOBILITY ELEMENT ROAD SEGMENTS
ALLOWABLE INCREASES ON CONGESTED ROAD SEGMENTS

| Level of Service | Two-Lane Road | Four-Lane Road | Six-Lane Road |
|------------------|---------------|----------------|---------------|
| LOS E | 200 ADT | 400 ADT | 600 ADT |
| LOS F | 100 ADT | 200 ADT | 300 ADT |

General Notes:

1. By adding proposed Project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes additional trips must mitigate a share of the cumulative impacts.
2. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

On-site Mobility Element Roads—The Mobility Element states that “new development shall provide needed roadway expansion and improvements on-site to meet demand created by the development, and to maintain a Level of Service C on Mobility Element Roads during peak traffic hours”. Pursuant to this policy, a significant traffic impact would result if:

- The additional or redistributed ADT generated by the proposed land development project will cause on-site Circulation Element Roads to operate below LOS C during peak traffic hours.

Off-Site Mobility Element Roads— The Mobility Element also addresses offsite Mobility Element roads. It states that “new development shall provide off-site improvements designed to contribute to the overall achievement of a Level of Service D on Mobility Element Roads.” Implementation Measure 1.1.3 addresses projects that would significantly impact congestion on roads operating at LOS E or F. It states: “new development that would significantly impact congestion on roads operating at LOS E or F, either currently or as a result of the project, will be denied unless improvements are scheduled to attain a LOS to D or better or appropriate mitigation is provided.” The following significance guidelines define a method for evaluating whether or not increased traffic volumes generated or redistributed from a proposed project will “significantly impact congestion” on County roads, operating at LOS E or F, either currently or as a result of the project.

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service impact on a road segment:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Mobility Element Road or State Highway currently operating at LOS E or LOS F, or will cause a Mobility Element Road or State Highway to operate at a LOS E or LOS F as a result of the proposed project as identified in *Table 5–1*, or
- The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity.

5.1.2 Intersections

This section provides guidance for evaluating adverse effects a project may have on signalized and unsignalized intersections. **Table 5–2** was obtained from the County guidelines and summarizes the allowable increases in delay or traffic volumes at signalized and unsignalized intersections. Exceeding the thresholds in *Table 5–2* would result in a significant impact.

Signalized Intersections—Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a signalized intersection:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F, or will cause a signalized intersection to operate at a LOS E or LOS F as identified in *Table 5–2*.
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.

There are no signalized intersections in the Project study area.

TABLE 5-2
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO INTERSECTIONS
ALLOWABLE INCREASES ON CONGESTED ROAD SEGMENTS

| Level of service | Signalized | Unsignalized |
|------------------|---------------------------------------------------------------------------------|---------------------------------------------------|
| LOS E | Delay of 2 seconds or less | 20 or less peak hour trips on a critical movement |
| LOS F | Either a Delay of 1 second, or 5 peak hour trips or less on a critical movement | 5 or less peak hour trips on a critical movement |

General Notes:

1. A critical movement is an intersection movement (right-turn, left-turn and through-movement) that experiences excessive queues, which typically operate at LOS F.
2. By adding proposed Project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
3. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.
4. For determining significance at signalized intersections with LOS F conditions, the analysis must evaluate both the delay *and* the number of trips on a critical movement, exceedance of either criteria result in a significant impact.

Unsignalized Intersections—The operating parameters and conditions for unsignalized intersections differ dramatically from those of signalized intersections. Very small volume increases on one leg or turn and/or through movement of an unsignalized intersection can substantially affect the calculated delay for the entire intersection. Significance criteria for unsignalized intersections are based upon a minimum number of trips added to a critical movement at an unsignalized intersection.

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic impact on an unsignalized intersection as listed in *Table 5-2* and described as text below:

- The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D, or
- The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or
- The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F, or
- The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F, or
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.

6.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

6.1 Trip Generation

6.1.1 Daily Trucks and Workers

The phase of construction which will have the highest amount of construction traffic is the excavation phase. It is estimated that a maximum of 25 trucks will operate during this phase of the Project. It is anticipated that the trucks will access the site over an 8-hour workday. A maximum of 7 workers are anticipated at this site.

6.1.2 Passenger Car Equivalence

Passenger Car Equivalence (PCE) is defined as the number of passenger cars that are displaced by a single heavy vehicle of a particular type under the prevailing traffic conditions. Heavy vehicles have a greater traffic impact than passenger cars since:

- They are larger than passenger cars, and therefore, occupy more roadway space; and
- Their performance characteristics are generally inferior to passenger cars, leading to the formation of downstream gaps in the traffic stream (especially on upgrades) which cannot always be effectively filled by normal passing maneuvers.

Most of the project-generated traffic consists of heavy vehicles (trucks). The daily traffic generation (ADT) is calculated with the PCE factor. Exhibit 12-25, Passenger Car Equivalents on General Terrain Segments, Highway Capacity Manual (HCM), Version 6.0, summarizes PCE factors for various types of terrain. The type of terrain along the truck route is level. The passenger car equivalent of 3.0 for trucks on a rolling terrain is used in this analysis.

Table 6-1 tabulates the total project traffic generation, including applying the PCE factor for the truck traffic. The total project is calculated to generate approximately 164 ADT with 26 AM peak hour trips (17 inbound / 9 outbound) and 26 PM peak hour trips (10 inbound / 16 outbound).

6.2 Trip Distribution/Assignment

Most construction traffic is likely to use SR 125 to access the site. The nearest interchange on SR 125 is at San Miguel Ranch Road. Hence, the construction truck and worker traffic are assumed to access the site via the San Miguel Ranch Road interchange to Procter Valley Road to San Miguel Road and then to Summit Meadow Road. It is assumed that 10% of the worker traffic will originate west of Procter Valley Road on San Miguel Road.

Figure 6-1 depicts the Project truck traffic distribution, while **Figure 6-2** depicts the Project workers traffic distribution. **Figure 6-3** depicts the total Project traffic volumes.

TABLE 6-1
CONSTRUCTION TRAFFIC TRIP GENERATION

| Construction Phase | Trucks | Daily Trips | | | AM Peak Hour | | | PM Peak Hour | | |
|---------------------------|--------|-------------|------------------|------------|--------------|----------|-----------|--------------|-----------|-----------|
| | | In + Out | PCE ^a | With PCE | In | Out | Total | In | Out | Total |
| Heavy Trucks ^b | 25 | 50 | 3 | 150 | 10 | 9 | 19 | 10 | 9 | 19 |
| Workers | 7 | 14 | 1 | 14 | 7 | 0 | 7 | 0 | 7 | 7 |
| Total | | | | 164 | 17 | 9 | 26 | 10 | 16 | 26 |

Footnotes

- a. Per Exhibit 12-25 Passenger Car Equivalent (PCE) for General Terrain Segments, Highway Capacity Manual (HCM) Version 6.0, the PCE for trucks is 3.0 for rolling terrain.
- b. Peak hour trips calculated assuming 8-hour work day.

General

Assumes all workers enter the worksite in a AM peak hour and leave the worksite in the PM peak hour.







Figure 6-3

Project Traffic Volumes

Figure 6-3

7.0 ANALYSIS OF EXISTING CONDITIONS

7.1 Peak Hour Intersection Levels of Service

Table 7-1 summarizes the study area intersection operations. As seen in *Table 7-1*, both intersections are calculated to operate at LOS B or better. The peak hour intersection analysis worksheets are included in *Appendix B*.

7.2 Daily Street Segment Levels of Service

Table 7-2 summarizes the study area segment operations. As seen in *Table 7-2*, both segments are calculated to operate at LOS C.

**TABLE 7-1
EXISTING INTERSECTION OPERATIONS**

| Intersection | Control Type | Peak Hour | Delay ^a | LOS ^b |
|--------------------------------------|-------------------|-----------|--------------------|------------------|
| 1. Proctor Valley Rd / San Miguel Rd | AWSC ^c | AM | 9.9 | A |
| | | PM | 12.4 | B |
| 2. Summit Meadow Rd / San Miguel Rd | TWSC ^d | AM | 8.5 | A |
| | | PM | 8.5 | A |

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. Level of Service.

c. AWSC – All-Way Stop Controlled intersection. Overall delay and LOS is reported

d. TWSC – Two-Way Stop Controlled intersection. Minor street left turn delay and LOS is reported.

UNSIGNALIZED

| Delay | LOS |
|--------------|-----|
| 0.0 ≤ 10.0 | A |
| 10.1 to 15.0 | B |
| 15.1 to 25.0 | C |
| 25.1 to 35.0 | D |
| 35.1 to 50.0 | E |
| ≥ 50.1 | F |

**TABLE 7-2
EXISTING STREET SEGMENT OPERATIONS**

| Street Segment | Classification | Capacity (LOS C) ^a | ADT ^b | LOS ^c |
|-----------------------------------------------------------------|---------------------------|-------------------------------|------------------|------------------|
| San Miguel Road Proctor Valley Rd to Summit Meadow Rd | Non-Mobility Local Street | 4,500 | 1,250 | C |
| Summit Meadow Road N/O San Miguel Rd | Non-Mobility Local Street | 4,500 | 550 | C |

Footnotes:

a. Capacities based on San Diego County Mobility Element.

b. Average Daily Traffic Volumes.

c. Level of Service.

8.0 CONSTRUCTION YEAR (2020) TRAFFIC

Construction is to begin in October 2019 and end in July 2020. The traffic counts were conducted in February 2019.

8.1 Traffic Volumes

Historical counts indicate the growth in traffic volume is less than 1% a year on San Miguel Road. Construction is anticipated to end approximately a little over 1.5 years from the date of the traffic counts. Hence, a conservative 1% annual growth for two years was applied to the existing traffic to determine the construction Year traffic. The construction traffic was added to the construction year traffic to determine the Construction Year with Project traffic volumes.

Figure 8-1 depicts the Construction Year without Project traffic, while *Figure 8-2* depicts the Construction Year with Construction (Project) traffic.

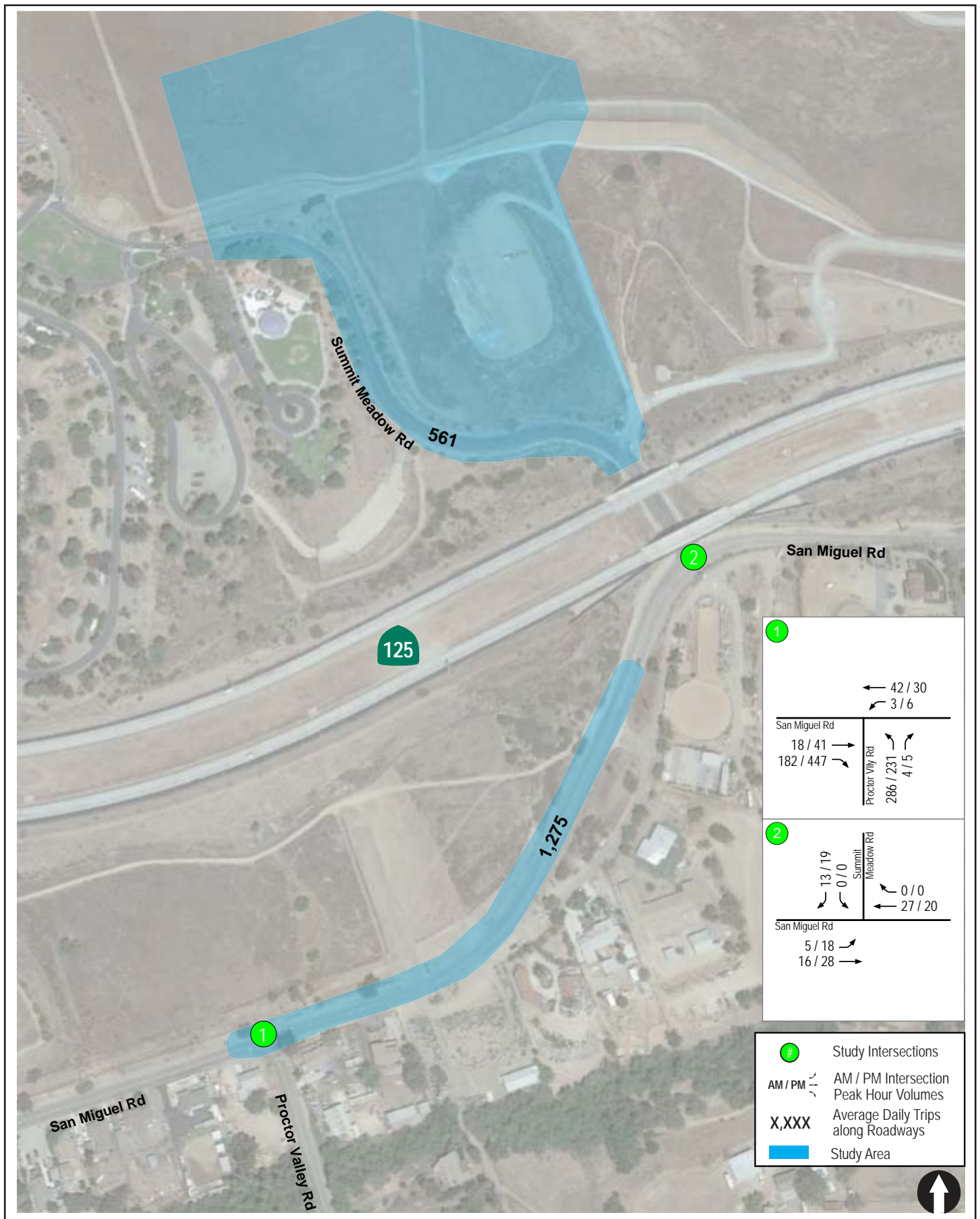


Figure 8-1

Construction Year without Project Traffic Volumes

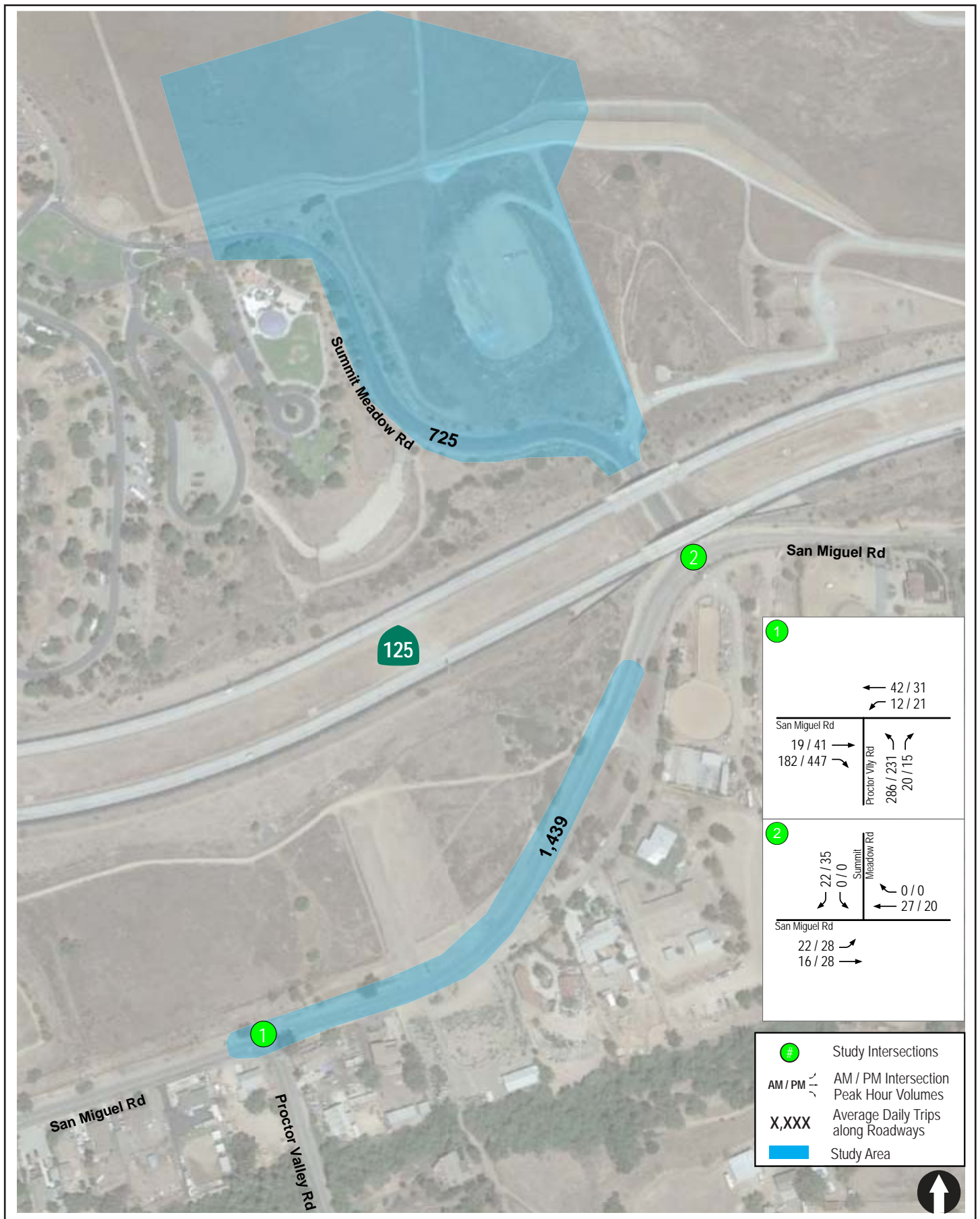


Figure 8-2
Construction Year with Project Traffic Volumes

9.0 ANALYSIS OF CONSTRUCTION YEAR SCENARIOS

9.1 Construction Year without Project

9.1.1 Intersection Analysis

Table 9-1 summarizes the study area intersection operations in the Construction Year without the Project. As seen in *Table 9-1*, both intersections are calculated to continue to operate at LOS B or better.

The peak hour intersection analysis worksheets for the Construction Year without the Project are included in *Appendix C*.

9.1.2 Daily Street Segment Levels of Service

Table 9-2 summarizes the study area segment operations in the Construction Year without the Project. As seen in *Table 9-2*, both segments are calculated to operate at LOS C.

9.2 Construction Year with Project

9.2.1 Intersection Analysis

Table 9-1 summarizes the study area intersection operations in the Construction Year with the Project. As seen in *Table 9-1*, both intersections are calculated to continue to operate at LOS B or better.

The peak hour intersection analysis worksheets for the Construction Year with the Project are included in *Appendix D*.

9.2.2 Daily Street Segment Levels of Service

Table 9-2 summarizes the study area segment operations in the Construction Year with the Project. As seen in *Table 9-2*, both segments are calculated to operate at LOS C.

**TABLE 9-1
CONSTRUCTION YEAR INTERSECTION OPERATIONS**

| Intersection | Control Type | Peak Hour | Construction Year without Project | | Construction Year with Project | | Δ^c | Significant? |
|-----------------------------------------|-------------------|-----------|-----------------------------------|-----|--------------------------------|-----|------------|--------------|
| | | | Delay | LOS | Delay | LOS | | |
| 1. Proctor Valley Rd / San Miguel Rd | AWSC ^d | AM | 9.9 | A | 10.1 | B | 0.2 | No |
| | | PM | 12.7 | B | 12.9 | B | 0.2 | No |
| 2. Summit Meadow Rd / San Miguel Rd | TWSC ^e | AM | 8.5 | A | 8.5 | A | 0.0 | No |
| | | PM | 8.5 | A | 8.5 | A | 0.0 | No |

Footnotes:

- Average delay expressed in seconds per vehicle.
- Level of Service.
- Δ denotes an increase in delay due to project.
- AWSC – All-Way Stop Controlled intersection. Overall intersection delay and LOS is reported.
- TWSC – Two-Way Stop Controlled intersection. Minor street left turn delay is reported.

UNSIGNALIZED

| Delay | LOS |
|--------------|-----|
| 0.0 ≤ 10.0 | A |
| 10.1 to 15.0 | B |
| 15.1 to 25.0 | C |
| 25.1 to 35.0 | D |
| 35.1 to 50.0 | E |
| ≥ 50.1 | F |

**TABLE 9-2
CONSTRUCTION YEAR STREET SEGMENT OPERATIONS**

| Street Segment | Existing Capacity (LOS E) ^a | Construction Year without Project | | Construction Year with Project | | Significant? |
|-----------------------------------------------------------------|----------------------------------------|-----------------------------------|------------------|--------------------------------|-----|--------------|
| | | ADT ^b | LOS ^c | ADT | LOS | |
| San Miguel Road Proctor Valley Rd to Summit Meadow Rd | 4,500 | 1,275 | C | 1,439 | C | No |
| Summit Meadow Road N/O San Miguel Rd | 4,500 | 561 | C | 725 | C | No |

Footnotes:

- Capacities based on San Diego County Roadway Classification & LOS table (Table 4-3).
- Average Daily Traffic
- Level of Service

10.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

Based on the preceding analysis, no significant impacts are determined with the addition of construction traffic. Hence, no mitigation measures are required.

End of Report