CONDITIONAL USE PERMIT FOR RECIRCULATED MICROFILTRATION/ REVERSE OSMOSIS (MF/RO) FACILITY FOR AGRICULTURE

CASE NUMBER: PHG 15 – 0021

Initial Study / Draft Mitigated Negative Declaration

Prepared for
City of Escondido

March 2016

ESA

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ENVIRONMENTAL CHECKLIST

Initial Study

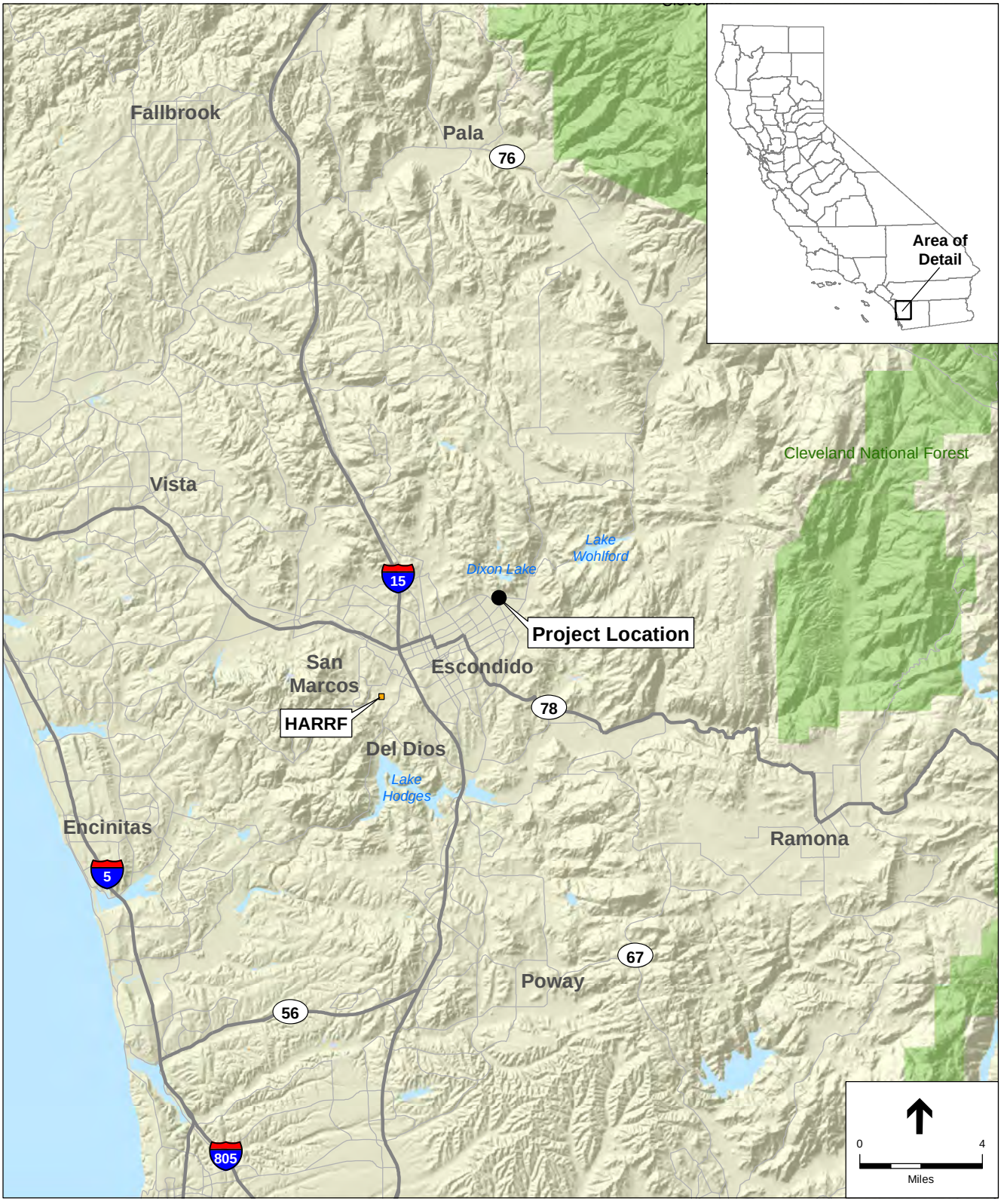
1. Project Title:	Conditional Use Permit for Microfiltration/Reverse Osmosis (MF/RO) Facility for Agriculture (proposed project) Case Number PHG 15 – 0021
2. Lead Agency Name and Address:	City of Escondido 201 N Broadway, 92025
3. Contact Person and Phone Number:	Jay Paul 760.839.4537 JPaul@escondido.org
4. Project Sponsor's Name and Address:	City of Escondido 201 N Broadway, 92025
5. General Plan Designation(s):	Urban I (U1)
6. Zoning Designation(s):	Single-Family Residential R-1-6

7. Location. The City of Escondido (City) is located in northern San Diego County, approximately 30 miles north of downtown San Diego and 18 miles east of the Pacific Ocean (**Figure 1**). The City is situated in a natural valley at approximately 650 feet above mean sea level (amsl) and surrounded by rolling hills and rugged terrain ranging up to 4,200 amsl.

The 3.25-acre project site is located at 2512 E. Washington Avenue; on the northern side of East Washington Avenue between North Citrus Avenue and East El Norte Parkway within the City of Escondido. The project site is bound by residential to the east and west, East El Norte Parkway to the north and East Washington Avenue to the south. The project site's Assessor's Parcel Number (APN) is 225-270-54.

8. Existing Setting. The project site is undeveloped, weed-abated land, generally covered by grasses. The project site is relatively flat and is at approximately 720 feet amsl. Several trees are distributed around the edges of the project site and include non-native and landscaping trees. The majority of the trees located on the project site occur along the southwestern fence line and along Washington Avenue. The project site includes an existing fence line along the eastern and western and northern boundaries.

9. Surrounding Land Uses. The project site is bound by residential development to the east and west. Offices and a residential development are located to the north across El Norte Parkway. Two churches are adjacent to the southern boundary of the project site. A residential development is south of the project site and south of East Washington Avenue (**Figure 2**).



SOURCE: ESRI.

Escondido MFRO Facility Project . 140480.02

Figure 1

Regional Location Map

SOURCE: ESRI.

Escondido MFRO Facility Project . 140480.02

Figure 2

Study Area Map

Purpose for Recirculation

The City of Escondido (City) originally published an IS covering this MFRO Facility for Agriculture in November 2015. Since the original publication, some changes have been made to the project description including the addition of several project design features. This recirculated IS modifies the analysis to include these project design features, affecting the impact analysis in multiple areas including Aesthetics, Biological Resources, Cultural Resources, and Noise. The IS has been recirculated pursuant to CEQA Guidelines 15073.5 to reflect project description modifications and environmental impact assessment revisions.

Project Background Purpose and Need

The City currently produces tertiary-treated recycled water (recycled water), which is used for landscape and industrial purposes (City of Escondido, 2013). Recycled water provided by the City is produced at the Hale Avenue Resources Recovery Facility (HARRF), a recycled water treatment and disposal facility that is owned and operated by the City. HARRF provides recycled water to other agencies as well as the City and excess recycled water that is not used by the City or sold to other recycled water customers, is disposed of via an ocean outfall (City of Escondido, 2013).

The City has in the past recent several years expanded the recycled water conveyance system east (recycled water pipelines, brine disposal pipeline and fiber optic cables, recycled water pump station and recycled water storage tank). The City expanded its recycled water system to result in a more dependable and sustainable water supply and less dependence on imported water for the City (City of Escondido, 2013). On November 6, 2013, the City of Escondido adopted the Final Initial Study / Mitigated Negative Declaration for the Recycled Water Easterly Main Extension, which addressed impacts that would occur from expanding the City's existing recycled water pipeline system to deliver recycled water to customers located east of downtown Escondido (City of Escondido, 2013). The Recycled Water Easterly Main Extension Project was implemented to provide recycled water infrastructure to three large irrigation customers: Oak Hill Memorial Park, Eagle Crest Golf Course, and San Diego Zoo Safari Park (City of Escondido, 2013). The Recycled Water Easterly Main Extension Project MND identified the potential for installation of an advanced water treatment (AWT) facility which could be used to improve local water quality and/or to produce purified water for indirect potable reuse purposes (City of Escondido, 2013). The City filed the Notice of Determination on November 14, 2015. The Final MND for the Recycled Water Easterly Main Extension is specifically incorporated by reference into this MND. The Recycled Water Easterly Main Extension Project MND may be downloaded from the City of Escondido's website at: https://www.escondido.org/recycled-water-easterly-main-extension-project.aspx.

The City proposes to implement the Microfiltration/Reverse Osmosis (MF/RO) Facility to provide water for agricultural use (proposed project). The MF/RO Facility would provide advanced treatment for Title 22 quality reuse water produced at HARRF. The facility would utilize membrane filtration (i.e., microfiltration (MF) or ultrafiltration (UF) membranes) and

reverse osmosis (RO) technologies sized for a total production capacity of 2.0 million gallons per day (mgd). This project component was originally conceptualized as part of the City's Potable Water Reuse Program (Reuse Program) identified in the Recycled Water Master Plan. The City is implementing this component of the Reuse Program to expedite a new, high-quality water supply to local agricultural growers, utilize existing water resources and help promote and support the local economy and agriculture.

Agricultural producers are a vital part of Escondido's community and its economy. Avocados are one of the most important crops grown in San Diego County, and water quality for avocado production is important for quantity and quality of production. Growers maintain a high demand for water, specifically low-salinity water. Water must be low in chlorides and other constituents to avoid leaf burn, root rot, and the need for excessive flushing. Salinity management issues take priority due to the drought in California forcing a shift to higher salinity source water. For these reasons, infrastructure to provide more recycled water with lower salinity to the growers is necessary to offset agricultural potable demand, decrease demand for imported water, and to continue efficient agricultural production.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. CEQA Guidelines Section 15367 states that the "lead agency," the City, has the principal responsibility for carrying out or approving a project and is responsible for compliance with CEQA. As lead agency, the City must complete an environmental review to determine if implementation of the proposed project would result in significant adverse environmental impacts. In compliance with CEQA, an Initial Study (IS) has been prepared to assist in making that determination. Based on the nature and scope of the proposed project and the evaluation contained in the IS environmental checklist (contained herein), the City has concluded that a Mitigated Negative Declaration (MND) is the appropriate level of analysis for this project. The MND shows that impacts of the proposed project are either less than significant or significant but mitigable with the incorporation of appropriate mitigation measures.

As stated in CEQA Guidelines Section 15070, an MND can be prepared when "(a) the initial study shows that there is not substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or (b) the initial study identifies potentially significant effects, but (1) revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and (2) there is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment."

CEQA-Plus Requirements

The U.S. Environmental Protection Agency (USEPA) sponsors the State Revolving Fund (SRF) Loan Program to provide funding for construction of publicly-owned treatment facilities and water reclamation projects. This funding for capital improvements to wastewater treatment and water recycling facilities is authorized under the federal Clean Water Act. As a water recycling project, the proposed project is eligible for SRF funding. In order to comply with requirements of the SRF Loan Program, which is administered by SWRCB in California, an IS/MND must fulfill additional requirements known as CEQA-Plus. The CEQA-Plus requirements have been established by the EPA and are intended to supplement the CEQA Guidelines with specific requirements for environmental documents acceptable to the SWRCB when reviewing applications for wastewater treatment facility loans. They are not intended to supersede or replace CEQA Guidelines.

The USEPA's CEQA-Plus requirements have been incorporated into the SWRCB's Environmental Review Process Guidelines for SRF Loan Applicants (SRF Guidelines) (September, 2004). The SWRCB's SRF Guidelines include the following requirements for compliance with CEQA-Plus. Eight copies of the CEQA document must be sent to the SWRCB, which then forwards the copies directly to federally designated agencies. The federal agencies must have at least fifty-one calendar days to review the CEQA document from the date it was mailed to the reviewing agency. Federal consultation must be completed before an SRF funding agreement can be approved by the SWRCB. The proposed project must be in compliance with Section 7 of the federal Endangered Species Act (FESA); must undergo a Clean Air Act conformity analysis (if in a nonattainment area or an attainment area subject to a maintenance plan); and must be in compliance with Section 106 of the National Historic Preservation Act. The CEQA document must also disclose all project-specific information listed in the outline provided by the SWRCB. This IS/MND has been prepared to comply with CEQA-Plus requirements and can be used to support the required federal consultations as described below.

Federal Clean Air Act

The federal Clean Air Act (FCAA) requires the USEPA to identify National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM10, PM2.5, and lead. Pursuant to the 1990 FCAA Amendments, the USEPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for these criteria air pollutants, based on whether or not the NAAQS had been achieved. The FCAA requires each state to prepare a State Implementation Plan (SIP), which is an air quality control plan that includes pollution control measures for states that violate the NAAQS. For SRF-funded projects, CEQA-Plus requirements include a FCAA general conformity analysis for projects in a federal nonattainment area or an attainment area subject to a SIP. The proposed project is in a federal nonattainment area for ozone, PM10 and PM2.5, as explained in Impact 3, Air Quality. Refer to **Appendix A** for the air quality emissions calculations. If a FCAA general conformity analysis is required, the information provided in this IS/MND would be used to support the analysis.

Federal Endangered Species Act

The SWRCB Division of Financial Assistance (Division) is the designated non-federal representative under the FESA for water reclamation projects that involve a SRF loan. To ensure compliance with Section 7 of the FESA, the Division reviews all SRF projects to determine the potential effects to federally listed species. This IS/MND includes the documentation required by the Division to disclose the proposed project's effects on sensitive species (see Impact 4 Biological Resources), including a Biological Resources Assessment prepared by ESA (see **Appendix B**). The Division staff will use this information to confer informally (and formally if necessary) with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service, as appropriate.

National Historic Preservation Act

CEQA-Plus requires SRF-funded projects to comply with Section 106 of the National Historic Preservation Act. Consultation with the State Historic Preservation Officer (SHPO) is required to demonstrate/confirm that Section 106 compliance has been achieved. The Division's Cultural Resources Officer (CRO) is responsible for the consultation with the SHPO. This IS/MND and the administrative record includes the information and documentation that the Division CRO is required to provide to the SHPO to initiate the Section 106 consultation, including, (1) identification of the proposed project's Area of Potential Effects (APE), (2) cultural records searches for the APE at the appropriate Information Centers, (3) documentation of Native American consultation, (4) cultural resources field surveys of the APE, (4) evaluations of elements of the built environment in and around the APE that are eligible for the National Register of Historic Places, and (5) Determination of Eligibility for any cultural resources that cannot be avoided during project construction (see Impact 5 Cultural Resources and **Appendix C**, Cultural Resources Report).

Project Description

The MFRO Facility would provide advanced treatment for Title 22 quality reuse water produced at HARRF. The facility would utilize membrane filtration (i.e., microfiltration (MF) or ultrafiltration (UF) membranes) and reverse osmosis (RO) technologies sized for a total production capacity of 2.0 million gallons per day (mgd). High quality treated water would be blended with Title 22 recycled water within an on-site below grade blend tank. The water would then be sent through the existing non-potable reuse water/agriculture pipelines and distributed to growers. The proposed project would consist of two residential-like buildings, the Chemical Storage Building and the MFRO Process Building, to house the MF/RO equipment, pumps, electrical rooms, control rooms, and storage rooms (**Figure 3**). A restroom would also be provided. Because the project site is located within a residentially zoned area, a Conditional Use Permit would be required from the City of Escondido Planning Commission. The Conditional Use Permit will only be granted by the Planning Commission (or City Council on appeal) if compatibility is ensured and if it is found that the use is appropriate in the proposed location.

The MF/RO Facility treatment equipment is proposed to operate with a production capacity of 0.5 mgd [350 gallons per minute (gpm)] and an ultimate effluent production capacity of 2.0 mgd (1,390 gpm). The MF/RO Facility would be designed to accommodate installation of additional equipment in the future that would provide an additional 1.0 mgd of production capacity. **Figure 4**, Process Flow Diagram, shows how MFRO Facility components are interrelated. Each component is further described below.

Influent Pipeline

A newly constructed 15,500 feet long 24-inch diameter pipeline would convey HARRF Title 22 recycled water to the MFRO Facility. The influent pipeline would enter the project site from Washington Avenue.

Facility Buildings

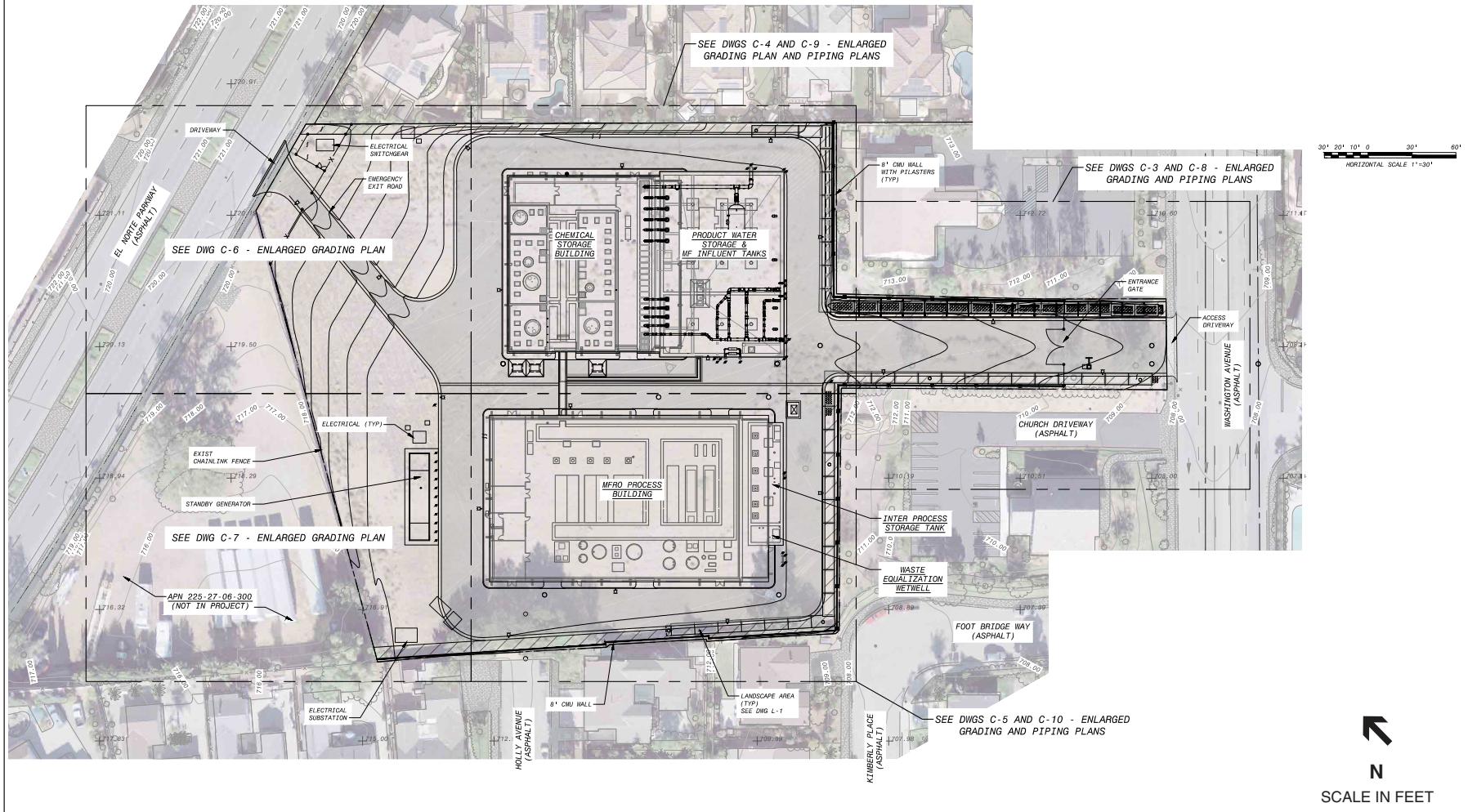
The process building would be approximately 21,775 square feet with dimensions of approximately 191 feet long by 114 feet wide. The building would be divided into an equipment room to house the MF/RO equipment, electrical room, control room, administration meeting room and storage room. A single restroom would also be provided. All pumps would be located indoors due to noise concerns. Mechanical piping through the treatment process would be located in a grating covered concrete pipe trench.

The chemical building would be approximately 14,400 square feet with dimensions of approximately 125 feet long by 118 feet wide. The building would be divided into chemical feed and storage, electrical room and a pump gallery for MF/UF feed pumps and the agriculture recycled water pumps. Pump discharge piping would be located in a grating covered concrete pipe trench. The buildings would be treated with stucco façade and architectural details to match neighboring building architecture.

Buildings and structures would be approximately 37 feet to top of roof ridgeline. Buildings and other onsite facilities would be setback from the property line per Development Standard setback criteria. Residential property setback criteria include 15-feet front yard setbacks, 20-feet rear yard setbacks, and 5-feet (one side) and 10-feet (other side) side yard setbacks. Although the proposed project is not technically residential, onsite buildings and facilities would be setback a minimum of 20-feet from the property line, consistent with residential development standards. The 20-feet setback would include perimeter roads and landscape areas. Building renderings are shown on **Figure 5** and **Figure 6**. The interior of the treatment facility is shown on **Figure 7**.

MF/UF Influent Tank

An influent underground storage or 90,000 gallon feed tank (40-feet wide by 18 feet long by 17 feet high) would be provided to ensure uninterrupted supply to the downstream treatment process. The MF/UF Influent Tank would be supplied by a dedicated pipeline that branches off from the main influent pipeline. The storage tank would be sized with 30-minute retention time to allow for constant feed to the MF/UF system.

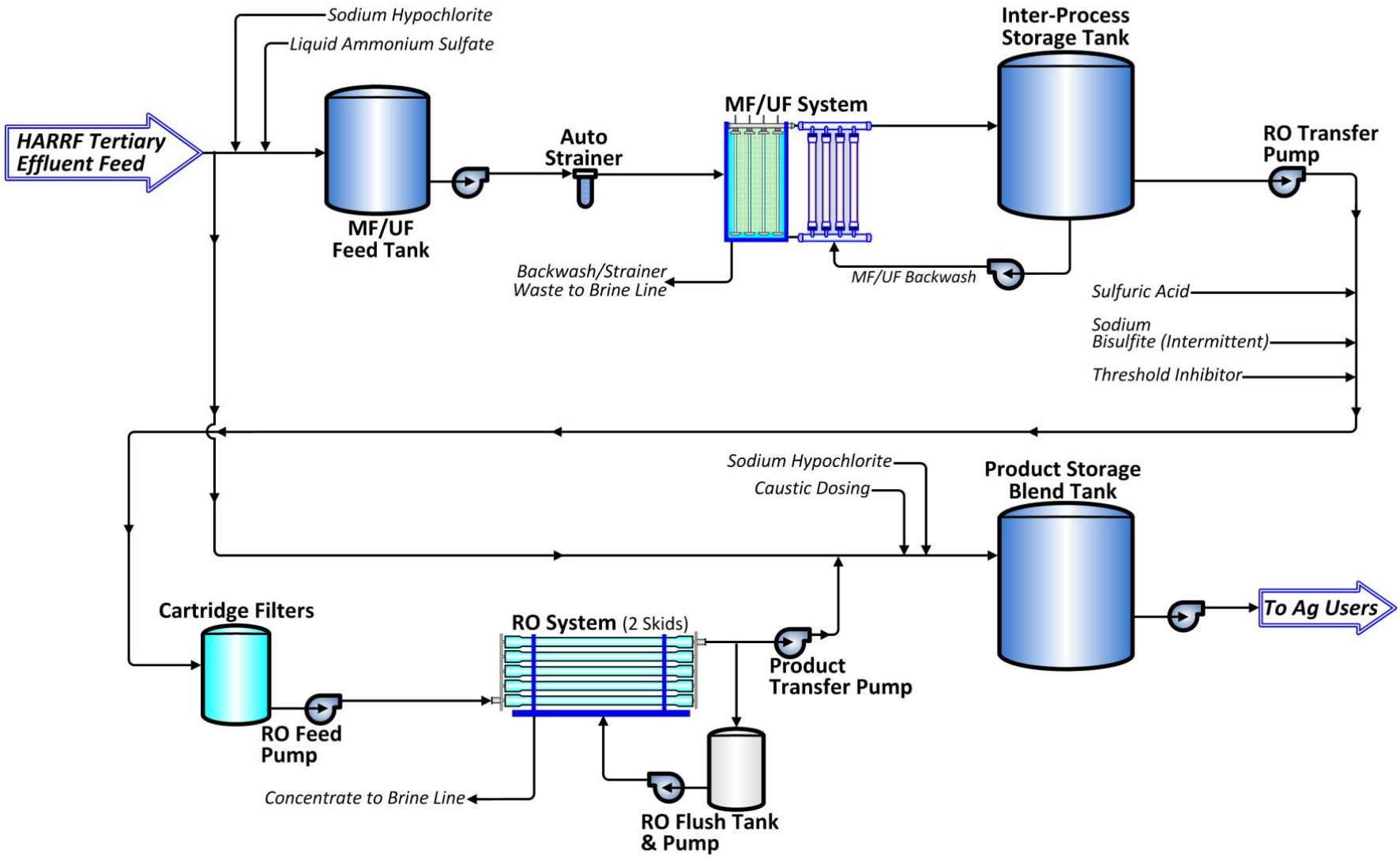


SOURCE: Black & Veatch

Escondido MFRO Facility Project . 140480.02

Figure 3

MFRO Facility Site Plan



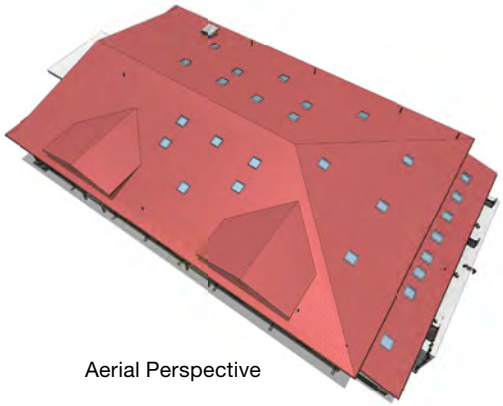
SOURCE: Black & Veatch, 2014

Escondido MFRO Facility Project . 140480.02

Figure 4

MFRO Facility Process Flow Diagram

MFRO Building - Southeast Perspective



Aerial Perspective

MFRO Building - Northwest Perspective

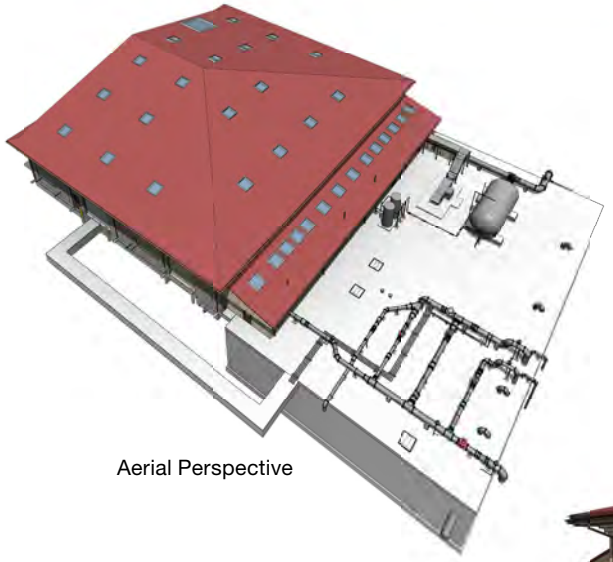
SOURCE: Black & Veatch

Escondido MFRO Facility Project . 140480.02

Figure 5

Proposed Treatment Building Architectural Rendering

MFRO Building - Southeast Perspective



Aerial Perspective

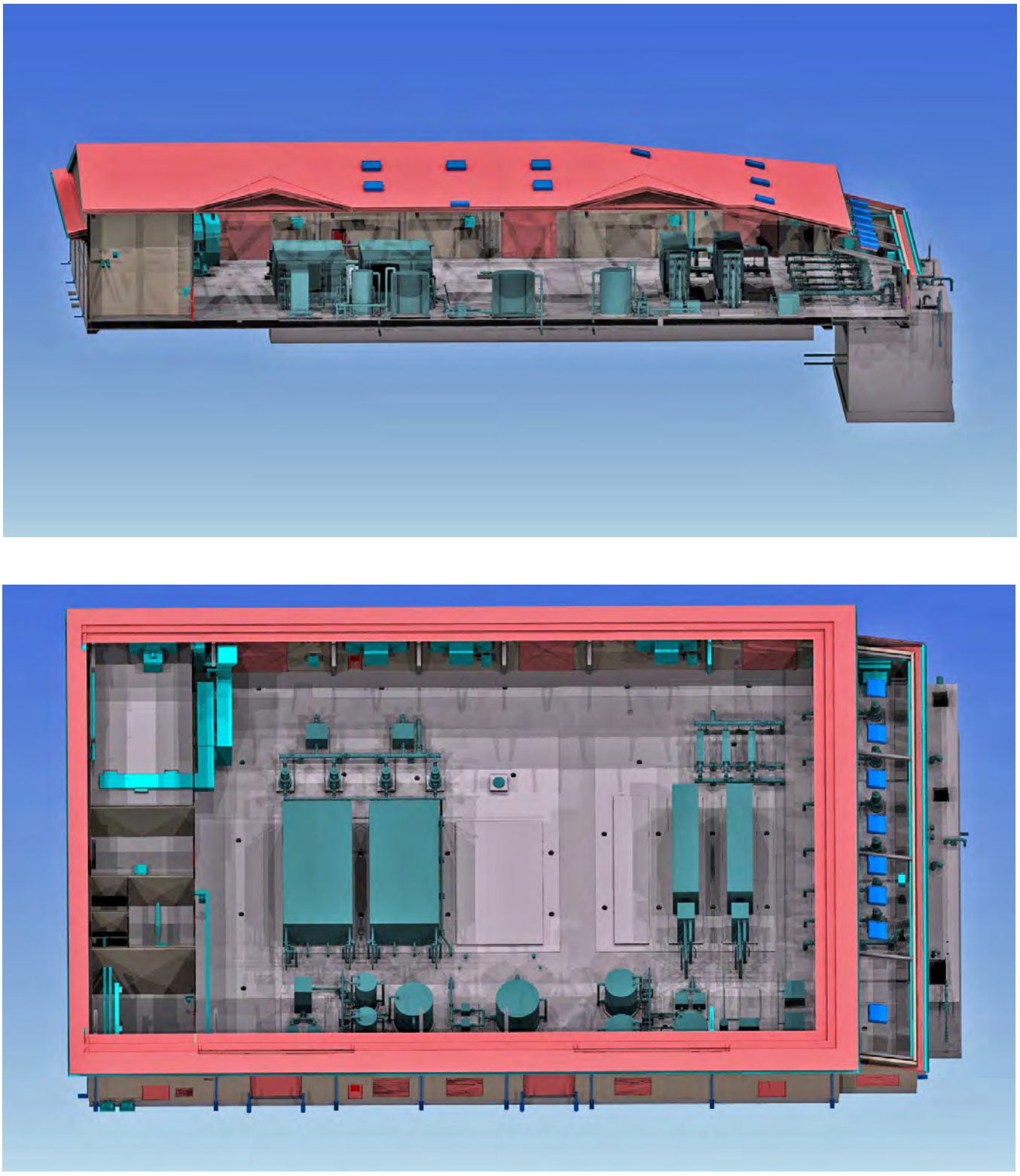
MFRO Building - Northwest Perspective

SOURCE: Black & Veatch

Escondido MFRO Facility Project . 140480.02

Figure 6

Proposed Chemical Storage Building Architectural Rendering



Escondido MFRO Facility Project . 140480.02

SOURCE: Black & Veatch

Figure 7
Proposed Interior of the Treatment Building

Feed Pump Station

The MFRO Facility would be equipped with three (two duty and one standby), 60 horsepower (hp) MF/UF feed pumps that would transfer water from the MF/UF feed storage tanks to the MF/UF system. Each pump would have a capacity of 950 gpm. Each pump would be equipped with a variable speed drive to control the pump speed to maintain a fixed pressure in the delivery pipeline. Prior to entering the MF/UF membrane units, the feed water would be passed through self-cleaning automatic strainers. The strainers would remove large particles and debris that could potentially damage the MF/UF membranes.

MF/UF System

Microfiltration or ultrafiltration membranes would be part of the proposed project as a pretreatment process for the RO system. MF/UF is a physical separation process in which suspended/colloidal solids are removed from the feed stream through a porous membrane.

The MF/UF system would be provided with a clean-in-place / maintenance wash systems to clean and condition the membranes. The system consists of chemical addition, air scour, and reverse filtration pumping systems and the associated piping and controls. The MF/UF membranes would periodically undergo backwash and chemical cleaning to remove foulants from the surface.

Inter-Process Storage Tank

One underground 163,000 gallon inter-process storage tank would be provided between the MF/UF and RO systems to equalize the MF/UF filtrate flows prior to being fed to the RO systems. The tank would be 20-feet wide by 64 feet long by 17-feet high.

Reverse Osmosis Transfer Pump Station and Cartridge Filters

Four, 30 hp, RO transfer pumps would pump MF/UF filtrate from the inter-process storage tank through the cartridge filters to the suction side of the RO feed pumps. Cartridge filters are recommended to guard against solids entering the system between the processes from tanks, gaskets, chemical impurities and other like causes. Each pump would be constant speed discharging to a common header that carries the flow to the cartridge filters and ultimately the RO trains. The cartridge filters would require replacement every 6-9 months. The cartridge filters are provided to protect the RO membranes from long-term solids deposition.

Reverse Osmosis Feed Pump Station

To allow for different operating conditions on individual membrane trains, as determined by the degree of membrane fouling, each RO trains would be served by its own dedicated variable speed feed pump. Four, 100 hp, RO feed pumps would boost the pressure of the RO feed water to the RO membranes.

Reverse Osmosis System

The RO system is a high pressure membrane process designed to remove dissolved constituents from the process feed water. Permeate produced by RO vessels would be combined into one

permeate stream. The system would be comprised of four trains that can be operated independently and each have a permeate capacity of 0.5 mgd.

Similar to the MF/UF membranes, the RO membrane elements would require periodic cleaning to restore permeability. The RO membranes are typically cleaned when the permeability has reduced to approximately 85 percent of the initial stable conditions. The required cleaning frequency varies from once every three to six months to once per year.

RO Flush System

When an RO train is shutdown for longer than 30 minutes, the membranes should be flushed with permeate to avoid fouling. The RO Flush System is a low pressure; low flow process in which two pressure vessel volume exchanges would be pumped through the train to waste. The flush system would include the following:

- One vertical cylindrical, flat-top, 4,000 gallon tank
- Two (one duty and one standby) horizontal centrifugal, 20 hp pumps. Each pump's capacity would be 300 gpm. The rated head would be 140 feet.

Product Storage Blend Tank

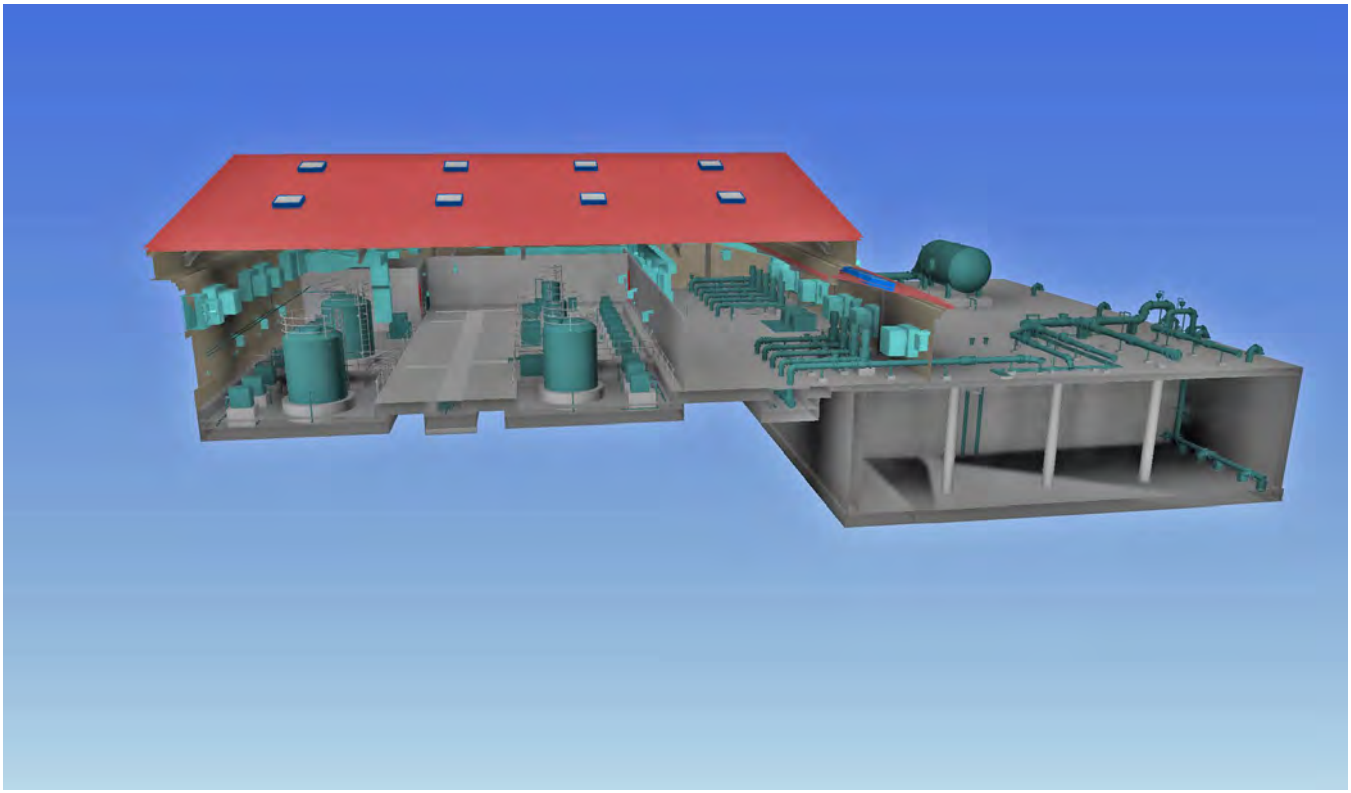
The proposed project product water would be blended with Title 22 recycled water to meet agriculture reuse water quality requirements. The ratio of Title 22 water to RO permeate is anticipated to range from 0 to 2.0. A rectangular below-grade concrete tank would be installed onsite for blended and storage purposes. The tank would be comprised of two basins, one for MF/UF influent storage tank and one for blended water storage. The overall tank dimensions are 72-feet wide by 120-feet long. The underground product water tank would provide a total useable storage volume of approximately 970,000 gallons. The MF/UF influent storage tank would provide a useable volume of 90,000 gallons.

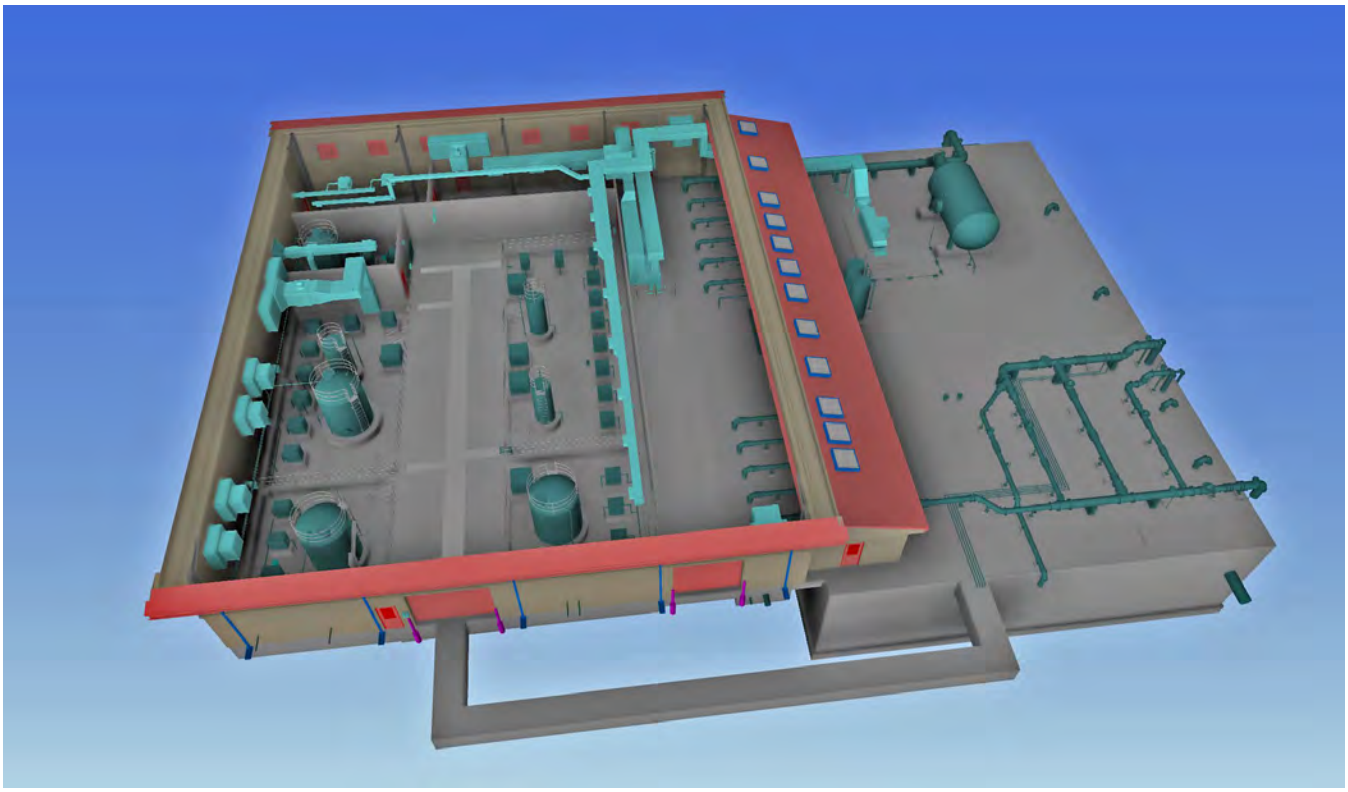
Chemical Feed and Storage

The proposed project would require chemical feed and storage facilities for treatment. Chemical storage and feed systems would be located inside the Chemical Storage Building. Chemical storage would be supplied by a combination of totes and permanent tanks. Storage totes would be removed and replaced when empty. Permanent tanks would be filled when empty. The interior of the chemical storage building is shown on **Figure 8.** The following chemicals would be used for the proposed project:

Onsite Pipeline Corridor

Pipelines entering the project site from Washington Avenue include the HARRF reuse influent pipeline, brine/reject waste return pipeline, agriculture supply pipeline, potable water, storm drain, fiber optic and electrical conduit.





Escondido MFRO Facility Project . 140480.02

SOURCE: Black & Veatch

Figure 8
Proposed Interior of the Chemical Storage Building

TABLE 2-1
CHEMICAL STORAGE

Chemical	Number / Storage Type	Volume (gallons)	Days of Storage (avg/max)	Number of Pumps/Pump Type
Sodium Hypochlorite (Disinfectant)	1 Vertical, Cylindrical, FRP Tank	5,700	45/27	3(2 duty, 1 standby) / 0.2 to 5.6 gph, peristaltic
Liquid Ammonium Sulfate (Disinfectant)	1 Vertical, Cylindrical, FRP Tank	850	31/14	2(1 duty, 1 standby) / 0.03 to 1.48 gph, peristaltic
Sulfuric Acid (pH Control)	1 Vertical, Cylindrical, Lined Steel Tank	3,200	56/27	2(1 duty, 1 standby) / 0.3 to 5 gph, motorized diaphragm
Sodium Bisulfite (pH Control)	1 Vertical, Cylindrical, FRP Tank	1,000	30/30	2 (1 duty, 1 standby) / 0.3 to 1.4 gph, peristaltic
Antiscalant	1 Vertical, Cylindrical, FRP Tank	400	58/35	2(1 duty, 1 standby) / 0.02 to 0.5 gph, motorized diaphragm
Sodium Hydroxide	1 Vertical, Cylindrical, Carbon Steel Tank	5,500	35/26	2(1 duty, 1 standby) / 0.4 to 8.8 gph, motorized diaphragm
Calcium Chloride	1 Vertical, Flat bottom FRP Tank	8,000	35/35	2 (1 duty, 1 standby) / 9.5 gph, peristaltic
Citric Acid	1 tote	300		2 (1 duty, 1 standby)
Proprietary RO Base	1 tote	300		2 (1 duty, 1 standby)

SOURCE: Black and Veatch, 2014.

Brine Waste Pipeline

MFRO treatment process waste streams include MF/UF backwash and RO concentrate that would be collected and conveyed back to the HARRF outfall through a newly constructed 16-inch brine pipeline.

Sanitary Sewer

Waste streams including strainer backwash, MF/UF CIP neutralized waste, RO flush waste, RO CIP waste, RO flush pump, RO CIP neutralized waste, as well as sanitary sewer waste would be discharged to a proposed onsite waste equalization wetwell prior to discharge to the sanitary sewer and conveyed to HARRF for treatment. The proposed sewer system would convey wastewater flows to the existing eight-inch vitrified clay pipe (VCP) located in Holly Avenue. Two submersible sump pumps would be provided to pump waste flows to the sanitary sewer.

Agriculture Pump Station

The agriculture pump station would supply agriculture reuse water to the Hogback Reservoir and agriculture distribution system. The pump station would consist of five pumps (four duty and one

standby), each rated for 1,820 gpm to meet peak period demands. The pumps would be electric motor driven and equipped with variable frequency drives to supply wide varying seasonal demands.

Electrical Systems

Electrical power for the proposed project would be supplied by the San Diego Gas & Electric (SDG&E). Power would be derived from a new pad mounted transformer at 480V. All electrical

equipment would be installed in a process building electrical room. Standby power would be provided by a 1,500 kilowatt engine generator that would be enclosed to reduce sound.

Equipment Acoustics

All process, pumping and chemical feed and storage equipment would be located inside of the buildings to meet the City's Municipal Code for sound level limits for the residential zone.

Site Access

Facility site access would be provided from Washington Avenue and El Norte Parkway as shown on the site plan. It is assumed that the entrance gate would be setback from the property line to provide a truck turn-off parking area from both roadways. Site access from El Norte Parkway for the MFRO facility would be from the northeast corner of Parcel APN 225-27-05-400.

Security Wall and Fencing

The proposed project would include security walls and fencing. The existing chain link fence along north property line would remain. The existing block wall between the project site and residential property would be used along the eastern boundary. A 6-foot high block wall would be placed along the southern boundary with ornamental fencing along the access road to Washington Avenue. A new block wall would be placed along the western boundary. The new wall would be located up to 36-inches from the existing wood fence to mitigate safety concerns. The northern boundary entrance would include fencing matching the fencing along Washington Avenue.

Landscaping

The proposed project would remove existing trees onsite. Ornamental landscaping would buffer and minimize views the proposed facility components and consist of low maintenance, low demand and fast-growing plantings. A connection to the facility effluent pipeline would be provided with metering for landscape reuse irrigation. Effluent management bio-retention areas and other best management practices would also be incorporated into landscape design along the drive approaching Washington Avenue.

Lighting

The proposed project would include pole-mounted light-emitting diode (LED) lights in the facility. Lighting would be in conformance with Title 24, of the California Code of Regulations and the City's Lighting Ordinance.

Storm Drain

An existing 48 inch storm drain is located in Washington Avenue. The Escondido Creek drainage channel is also located south of the project site. The project would include underground storm water detention basins to capture and control the release of water as required by the City's storm water requirements. Additionally, the project would include onsite bio filtration areas to treat runoff.

Project Construction

Project construction would be approximately 12 months. Construction would occur Monday through Friday; construction hours would be 7:00 a.m. to 4:30 p.m.

The maximum construction crew is expected to range from four to 50 persons, but would vary during the course of the proposed project construction in accordance with the means and methods of the contractor.

Twenty-one maximum daily truck trips are anticipated for exporting soil. Soil hauling would occur over approximately two months The proposed project would result in a total excavation of 10,000 cubic yards of soil (480 cubic yards daily). Approximately 21 maximum daily truck trips are anticipated for export of soil material and delivery of construction materials. The disposal of the excavated materials would be at the discretion of the contractor. The soil disposal site would be approximately 20 miles one way. Onsite soils could also be used for fill.

Construction Equipment

Construction of the proposed new facilities would involve the use of a wide variety of heavy construction equipment onsite. The majority of the equipment and vehicles would be associated with the intensive earthwork, structural and paving phases of construction. Large construction equipment, including backhoes, bore/drill rigs, cement mixers, industrial saws, compactors, cranes, excavator, forklifts, graders, haul trucks, loaders, pavers, rollers, sweepers, trenchers would be used during the construction phase of the proposed project.

Pipeline Construction

The maximum trench depth would be 8.5-feet deep. The maximum trench width would be 4-feet wide (12-inches clear on each side of a 24-inch pipe).

Tank Excavations

Product water tank/influent tank excavations would be approximately 120-feet long and 75-feet wide. The interprocess tank excavation would be 20-feet deep, 83-feet long, and 20-feet wide.

Building Foundations

Slabs on grade would be supported with a six-inch layer of untreated aggregate base overlain by a ten-millimeter thick impermeable plastic membrane. The tank and building foundations would be

supported on three-feet of geogrid reinforced soil (geogrid spaced at 12-inch intervals in the soil). Onsite soils could be used for fill, compacted to 90% of its maximum dry density.

Project Operation and Maintenance Details

The proposed project would not require full-time employees onsite. Employees would be required for monthly routine facility maintenance, delivery, and removal of chemicals.

Responsible Agencies, Permits and Approvals

The following potential permits and/or approvals from other agencies that may be required prior to construction of the proposed project include:

- U.S. Fish and Wildlife Service: Federal Endangered Species Act Compliance (CEQA Plus);
- California Department of Fish & Wildlife (Region 3): State Endangered Species Act Compliance (CEQA Plus)
- San Diego Regional Water Quality Control Board (Region 9): Construction General Permit
- State Historic Preservation Office: Section 106 National Historic Preservation Act Compliance (CEQA Plus)
- City of Escondido: Approvals including Conditional Use Permit and Design Review (as required)
    - Roadway Encroachment Permit
    - Construction Staging and Traffic Management Plan
    - Construction Stormwater Pollution Prevention Plan
- County of San Diego: Use Permit for Storage Tank
- San Diego County Air Pollution Control District: Authority to Construct and Authority to Operate

Environmental Factors Potentially Affected

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

☒ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology, Soils and Seismicity
☒ Greenhouse Gas Emissions	☒ Hazards and Hazardous Materials	☒ Hydrology and Water Quality
☒ Land Use and Land Use Planning	☐ Mineral Resources	☒ Noise
☐ Population and Housing	☐ Public Services	☐ Recreation
☒ Transportation and Traffic	☐ Utilities and Service Systems	☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by 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, no further environmental documentation is required.

Signature	3·2·16 Date
JAY PAUL, PLANNING DIV. Printed Name	PHG 15-0021 MFRO For

Environmental Checklist

Aesthetics

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
1.	**AESTHETICS — Would the project:**				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Discussion

a) **No Impact.** The project site is undeveloped, weed-abated land, generally covered by grasses but is set among a generally developed area. The project site is bound by residential development to the east and west. Offices and a residential development are located to the north across El Norte Parkway. Two churches are adjacent to the southern boundary of the project site. A residential development is south of the project site and south of East Washington Avenue (**Figure 2**). There are no scenic vistas on or near the project site (Escondido, 2012). The nearest scenic resource is approximately 0.5 miles north of the project site, which is Dixon Lake and is surrounded by open space. The lake is separated from the project site by elevation, open space, single family homes and a major road, El Norte Parkway. As such, the lake is not visible from the project site. The project area and immediate surrounding area has not been designated as a scenic vista therefore the project would not have a substantial adverse effect on a scenic vista.

b) **No Impact.** There are no officially designated state scenic highways in the vicinity of the project site. The nearest state scenic highway is State Route (SR) 78 through Anza-Borrego Desert State Park, approximately 35 miles east of the project site. The nearest eligible state scenic highway-not officially designated is SR-76 approximately 15 miles north of the project site (DOT, 2015). The project site is not within a scenic roadway identified in the City's General Plan. Additionally, as described in discussion 5.a below, there are no recorded historical resources located on or near the project site. Thus, the proposed project would not damage scenic resources within a state scenic highway.

c) **Less than Significant**. The proposed project site is currently undeveloped, and the existing visual character of the surrounding area is characterized by residential neighborhoods with primarily single-family homes (**Figure 9**). The proposed project would consist of a chemical storage building and MFRO Facility building, each

Photo 1 - Trees located along the western boundary of the project site

Photo 2 - Trees located at the site entrance at Washington Avenue

Photo 3 - Trees located along the eastern boundary

SOURCE: ESA, 2015

Escondido MFRO Facility Project . 140480.02

Figure 9

Photos of Project Vicinity

with height up to approximately 37 feet to the top of roof ridgeline. The process building would be approximately 21,775 square feet with dimensions of approximately 191 feet long by 114 feet wide. The chemical building would be approximately 14,400 square feet with dimensions of approximately 125 feet long by 118 feet wide. The on-site facilities would be setback from the property line per the City of Escondido's Development Standards setback criteria. The building's setback would exceed minimum requirement for residential zone in order to provide for appropriate separation (i.e., more than 20 feet).Setbacks would include perimeter roads and landscaped areas (Black & Veatch, 2014).

The proposed buildings would be treated with stucco façade and architectural details to be compatible with neighboring single-family homes building architecture. Building renderings are shown on **Figure 5** and **Figure 6**. Similar to the residential construction patterns in the area, the proposed buildings architecture would include a hip roof[1] with dormers[2], which also minimizes view blockage and shadow casting. Development of the proposed project would include security walls and fencing. This would include block walls along El Norte Parkway, the south side, and the west side of the property, as well as ornamental fencing along the access road to Washington Avenue and El Norte Parkway. There is an existing block wall between the property and the adjacent residence on the east side of the property therefore no additional walls would be necessary (Black & Veatch, 2014). The proposed buildings and other above-ground facilities would permanently alter the visual character of the project site and its surroundings as the project site is currently undeveloped. However, given the proposed project's compliance with the City of Escondido's Development Standards, the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings, and the impact would remain less than significant.

There are eight oak trees located along the southwestern project boundary. Of the eight trees along this fence line, at least three are protected in accordance with Article 55 of the City's Zoning Code based on their size. The City would comply with the City Zoning Code to replace oak trees if necessary as outlined in the Conditional Use Permit. The proposed project would include implementation of landscape features, including mostly drought-tolerant species that would be smaller and less visually prominent than the existing trees. Bio-retention areas and other best management practices would also be incorporated into landscape design for the driveway approaching Washington Avenue. As a result, the site characteristics that include the onsite landscaping would change from dense tall foliage on the western boundary to less pronounced landscaping that is evenly distributed throughout the site. The new trees and other landscaping would be native or non-native, non-invasive species, and would be consistent with the character of the surrounding area. As a result of the landscaping and architectural design features that would be included as part of the project approved by the Conditional Use Permit, impacts to visual character would be less than significant.

1 A hip roof is a type of roof where all sides slope downwards to the walls, usually with a fairly gentle slope.

2 A dormer is a structural element of a building that protrudes from the plane of a sloping roof surface.

d) **Less than Significant Impact.** Construction activities would occur Monday through Friday during permitted daylight hours between 7:00 a.m. and 4:30 p.m. No nighttime construction is planned.

Proposed above-ground facilities and buildings constructed as part of the proposed project would contain lighting for security and maintenance purposes. Site lighting would consist of pole-mounted LED lights, which would conform to California Building Standards Code, Title 24, as well as the City of Escondido's zoning code standards that regulate outdoor lighting. Depending on the building materials and the orientation of the exterior lighting, a new source of light and glare may be created. The lighting would be similar to, and blend into the existing lighting in the project vicinity. As a result, impacts related to lighting would be less than significant.

The proposed project would not introduce a substantial source of glare to the project site that would affect views in the area because the project would construct buildings using typical building materials (i.e., stucco siding, tile roofs). These materials would not create substantial daytime glare. Sources of daytime glare would include cars within the project site; however, the project would not include a substantial number of cars visiting the project site. As a result, impacts would be less than significant.

References

Department of Transportation, California Scenic Highway Mapping System, 2015, http://www.dot.ca.gov/hq/LandArch/scenic_highways.

Black & Veatch, *MFRO and AWT Facilities Conceptual Design Report*, 2014.

City of Escondido, General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, 2012. https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Aesthetics.pdf.

Agricultural and Forest Resources

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

Discussion

a) **No Impact.** The project site is currently undeveloped and vacant and does not support agricultural uses. The project site has a land use designation of U1 (Urban I) and is zoned as Single-Family Residential R-1-6, which identifies the area for single family dwellings and related accessory uses on a lot size of 6,000 square feet (City of Escondido, 2012). The project vicinity is also void of agricultural uses. The California Department of Conservation Important Farmland Map for San Diego County identified the project site as urban and built up land (CDC, 2010). No areas of Prime Farmland, Unique Farmland, or Farmland of Statewide importance would be affected by the project or converted to a non-agricultural use. Therefore, no impacts would occur.

b) **No Impact.** The project site has a land use designation of U1 (Urban I) and is zoned as Single-Family Residential R-1-6, which identifies the area for single family dwellings and related accessory uses on a lot size of 6,000 square feet (City of Escondido, 2012). Furthermore, the project site is located on Non-Williamson Act – Urban and Built-Up

Land as defined by the latest Farmland Mapping and Monitoring Program Important Farmland Maps (CDC, 2010). Therefore, no impacts would occur.

c) **No Impact.** The project site has a land use designation of U1 (Urban I) and is zoned as Single-Family Residential R-1-6 and is not zoned as forest land (City of Escondido, 2012). Therefore, no impacts would occur since the project would not conflict with existing zoning for agricultural use, or a Williamson Act contract.

d) **No Impact.** The project site has a land use designation of U1 (Urban I) and is zoned as Single-Family Residential R-1-6 and is not zoned as forest land (City of Escondido, 2012). The City of Escondido contains approximately 4,945 acres of Potential Forest Resources; however, the project site lies outside mapped Potential Forest Resources (City of Escondido, 2012). Therefore, no impacts would occur to forestland.

e) **No Impact.** See response 2 (a) and (d) above. The proposed project consists of construction of a MFRO facility to produce recycled water for agricultural uses. The proposed project would improve water quality for agricultural producers by reducing chloride levels. The proposed project would not convert potential farmland or forest land to non-agriculture/non-forestry use. Therefore, no impacts would occur to agriculture or forestry resources.

References

City of Escondido, General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, 2012. http://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Agriculture.pdf

City of Escondido, General Plan, Land Use and Community Form Element, 2012. https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/GeneralPlanChapterII.pdf.

California Department of Conservation, Farmland Mapping and Monitoring Program, San Diego Important Farmland, 2010. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/sdg10_w.pdf.

Air Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
3. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Discussion

a) **Less Than Significant Impact.** The project site is located in the City of Escondido, which is located within the San Diego Air Basin. The San Diego County Air Pollution Control District (SDAPCD) has jurisdiction over the SDAB and is responsible for the administration and enforcement of air quality regulations. The SDAPCD and the San Diego Association of Governments (SANDAG) develop and implement the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. This plan is the San Diego Regional Air Quality Strategy (RAQS). The RAQS relies on information from the California Air Resources Board (CARB) and SANDAG, including projected growth and mobile, area, and all other source emissions, to project future emissions and develop appropriate strategies necessary for the reduction of source emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the incorporated cities, such as the City of Escondido, and the County of San Diego. As such, projects in the City of Escondido that propose development that is in conformance and consistent with the growth anticipated in the City's General Plan would be consistent with the RAQS and SIP. In the event that a project would propose development that is less dense than anticipated within the City's General Plan, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated in the City's General Plan and SANDAG's growth projections, the project might be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality. The SIP relies on the same

information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for SDAB.

The project site has a land use designation of U1 (Urban I) and is zoned as Single-Family Residential R-1-6, which identifies the area for single family dwellings and related accessory uses on a lot size of 6,000 square feet. The adjoining areas are also designated U1 (Urban I) and is zoned as Single-Family Residential R-1-6. Although the proposed project does not involve the development of single-family residential uses, with respect to growth, the development of the proposed MF/RO facility would not introduce additional population at the project site and would not require any new permanent employment positions at the project site on a daily basis. Employees of two to three people would only be required at the project site once a month for routine facility maintenance, delivery, and removal of chemicals.

The SDAPCD also is responsible for the development of the SDAB's portion of the State Implementation Plan (SIP), which is required under the federal Clean Air Act for areas that are in nonattainment for criteria pollutants. The project is a Federal action and therefore, under the Clean Air Act the project would be subject to a SIP conformity determination as the project is in a marginal nonattainment area for 8-hour ozone. Table 3-1 shows the attainment status for each of the criteria air pollutants and the *de minimis* levels for ozone pre-cursors that the project's emissions are compared to for the SIP conformity determination. If the project is below the *de minimis* levels then the project is determined to be in conformity with the SIP. As shown in **Table 3-1**, ozone precursors are below the *de minimis* thresholds for both construction and operational activities and therefore the project is consistent with the SIP.

As discussed previously, projects that propose development that is consistent with the growth anticipated by the City's General Plan would be consistent with the RAQS and SIP. In the event that a project would propose development that is less dense than anticipated within the City's General Plan, the project would likewise be consistent with the RAQS. Because the proposed project would result in less growth than what was anticipated in the General Plan for this area when compared to the potential new residential developments that could otherwise be developed at the project site under the City's current General Plan land use designation and zoning standards, the project would be consistent with the RAQS and SIP. Thus, the project would not conflict with plans for the attainment and maintenance of criteria air pollutants. This would be a less than significant impact and no mitigation would be required.

TABLE 3-1
SIP CONFORMITY EVALUATION

Pollutant	Federal Status	Nonattainment Rates	Threshold of Significance (tons/year)	Construction Emissions (tons/year)	Operational Emissions (tons/year)
Ozone (O_3)	Nonattainment	Marginal	——— See VOC & NO_X ———		
Carbon Monoxide (CO)	Attainment	N/A	N/A	8.11	0.143
Oxides of Nitrogen (NO_X)	N/A	N/A	100	11.92	0.034
Volatile Organic Compounds (VOC)	N/A	N/A	100	1.47	0.064
Lead (Pb)	Attainment	N/A	N/A	N/A	N/A
Particulate matter less than 2.5 microns ($PM_{2.5}$)	Attainment	N/A	N/A	1.12	0.006
Particulate matter less than 10 microns ($PM_{2.5}$)	Attainment	N/A	N/A	1.55	0.0023
Sulfur Dioxide (SO_2)	Attainment	N/A	N/A	0.01	0.0000

N/A = Non-applicable

SOURCE: ESA CalEEMod modeling 2015; EPA 2014; EPA 2015

b) **Less Than Significant Impact.** The City of Escondido has established daily thresholds of significance for construction and operation in the City's Municipal Code, Chapter 33 Article 47, Coordination of CEQA (Sec. 33-924). These thresholds are based on the County of San Diego and South Coast Air Quality Management District thresholds and have been adopted for the purpose of determining significance under CEQA.

Construction emissions from the project are anticipated to result from the on-site use of equipment and the disturbance of soil resulting in fugitive emissions. Detailed assumption, calculations, and modeling outputs are included in **Appendix A** to this document. The project construction emissions of criteria pollutants are identified in **Table 3-2**. As shown, none of the unmitigated criteria pollutant emissions would exceed the regulatory thresholds, therefore emissions from construction activities would be less than significant and no mitigation is required.

Operational emissions from the project are anticipated from the operation of the buildings and the limited vehicle trips associated with the maintenance and product deliveries for the project operations. Detailed assumption, calculations, and modeling outputs are included in Appendix A to this document. The project's anticipated operational emissions of criteria pollutants are identified in **Table 3-3**. As shown, none of the unmitigated criteria pollutant emissions would exceed the regulatory thresholds, therefore emissions from operational activities would be less than significant and no mitigation is required.

TABLE 3-2
UNMITIGATED CONSTRUCTION EMISSIONS[a]

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Site Preparation	7.74	78.10	58.21	0.07	23.29	13.97
Grading/Excavation	8.90	88.76	63.52	0.09	18.65	11.46
Drainage/Utilities/Subgrade	8.04	74.86	49.75	0.07	11.31	7.62
Building Construction	6.15	49.49	32.93	0.05	3.37	3.21
Architectural Coating	4.23	2.38	1.93	0.00	0.20	0.20
Paving	4.10	39.51	25.59	0.04	2.60	2.26
Building/Paving/Coating	14.48	91.38	60.45	0.10	6.17	5.67
Maximum Project Emissions	14.48	91.38	63.52	0.10	23.29	13.97
City Thresholds	**75**	**250**	**550**	**250**	**100**	**55**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

[a] pounds per day

SOURCE: ESA CalEEMod modeling 2015

TABLE 3-3
UNMITIGATED OPERATIONAL EMISSIONS[a]

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area	0.278	0.000	0.001	0.000	0.000	0.000
Energy	0.002	0.015	0.013	0.000	0.001	0.001
Mobile	0.077	0.175	0.792	0.002	0.126	0.035
Project Emissions	0.356	0.190	0.806	0.002	0.127	0.036
City Thresholds	55	250	550	250	100	55
Significant	**No**	**No**	**No**	**No**	**No**	**No**

a pounds per day

SOURCE: ESA CalEEMod modeling 2015

Little to no long-term increase in traffic generation would occur as a result of the proposed project. Traffic along El Norte Road and Washington Avenue would be minimal from vehicles accessing of the project site during operations. It is anticipated that deliveries would be made once a month and occur at the same time as project maintenance activities, which would only require an on-site staff of two to three employees. When maintenance and deliveries are not scheduled, there would be no traffic to the site. The intermittent operational traffic would not exceed level of service standards and travel demand measures for designated roads or highways. Thus, the impacts from vehicular carbon monoxide emissions associated with the project would be less than significant.

c) **Less Than Significant Impact.** As the SDAB is currently in nonattainment for the federal and State ozone standards and the State PM_{10} and $PM_{2.5}$ standards, the generation of these pollutants by the proposed project during construction and operational activities could result in a cumulative significant impact associated with the cumulative net increase of any criteria pollutant for which the region is in non-attainment. However, the approach for assessing the project's contribution to cumulative impacts is based on the RAQS forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and State Clean Air Acts. As discussed previously under Question 3(a), the proposed project would result in less growth than what was anticipated in the General Plan for the project site. As such, the proposed project would be consistent with the RAQS and SIP, and would not conflict with plans for the attainment and maintenance of criteria air pollutants. In addition, as discussed under Question 3(b) and shown in Tables 3-2 and 3-3, the daily emissions generated during construction and operational activities by the proposed project would not exceed the City's CEQA significance thresholds that have been established as quality of life standards. Additionally, the project would also not result in the degradation of level of service of the roadways as discussed under Question 3(b). Therefore, the Project's contribution to cumulative air quality impacts would be less than significant.

d) **Less Than Significant Impact.** Sensitive receptors in the vicinity of the project site include single family residences directly to the east and west of the project site and additional residential development north of the site across El Norte Parkway and south of the site across E. Washington Avenue. Construction activities would generate diesel emissions from the operation of onsite equipment. Diesel particulate matter (DPM) is considered a carcinogen by the state of California. The California Air Pollution Control Officers' Association (CAPCOA) evaluates the impacts from carcinogens based on a lifetime exposure to the pollutant 24 hours per day, 365 days per year for up to 70 years. Construction activities for the project would result in temporary emissions, estimated for an eight hour work day over a twelve month period. Therefore, as exposure to DPM from construction activities is short-term, exposure of sensitive receptors during construction would not be significant. The short duration of project construction would not contribute to an excessive cancer or non-cancer risk for nearby sensitive receptors and therefore the impact would be less than significant. No mitigation is required.

Operational emissions would not add any new stationary sources such as generators or boilers and therefore would not result in the exposure of local sensitive receptors to emissions from these stationary sources. The project would use and store chemicals onsite that have the potential to be hazardous to nearby sensitive receptors if directly exposed to the substances. However these chemicals would be contained in tanks that are directly connected to the process equipment or have secondary containment and therefore would be no exposure of the sensitive receptors to these chemicals. Additionally, as discussed in Section 8 (Hazards), these chemicals would be in limited quantities and stored, handled, and waste disposed of according to federal, state and local health and

safety requirements. Therefore, exposure of sensitive receptors to these chemicals would be minimal and less than significant. No mitigation is required.

e) **Less Than Significant Impact.** Land uses that are associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed MFRO facility, which treats tertiary-treated recycled water to reduce salinity levels for use by agricultural uses, would not generate objectionable odors that would affect the neighboring uses. Tertiary-treated water (recycled water) is currently used for landscape and industrial purposes in the City. As such, impacts associated with objectionable odors during project operations would be less than significant.

During construction of the project, exhaust from equipment and activities associated with the application of architectural coatings and other interior and exterior finishes may produce discernible odors typical of most construction sites. Such odors would be a temporary source of nuisance to adjacent uses, but would not affect a substantial number of people. As odors associated with project construction would be temporary and intermittent in nature, the odors would not be considered to be a significant environmental impact. Therefore, impacts associated with objectionable odors would be less than significant and no mitigation is required.

References

Environmental Protection Agency (EPA). 2015. *Current Nonattainment Counties for All Criteria Pollutants.* Updated January 30. Accessed http://www.epa.gov/airquality/greenbk/ancl.html#CALIFORNIA. May 8, 2015.

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Escondido, City of. 2015. *Escondido Municipal Code. Sec. 33-214. Coordination of CEQA, quality of life standards, and growth management provisions.* March.

San Diego, County of. 2007. *County of San Diego Guidelines for Determining Significance Air Quality.* March 19.

Biological Resources

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
4.	**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?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

Background

ESA prepared a Biological Resources Assessment in May 2015 to evaluate biological resources within the project site and surrounding vicinity, and provide biological recommendations based on literature reviews, and the survey of the project site. The Biological Resources Assessment is provided in **Appendix B**. Prior to conducting the field survey, ESA biologists conducted a database search and review of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) (CDFW, 2015) and California Native Plant Society (CNPS) Rare Plant Inventory (CNPS, 2015) for recorded occurrences of special-status plant and wildlife species within the Valley Center USGS quadrangle and the eight surrounding USGS quadrangles, and the U.S. Fish and Wildlife Service (USFWS) IPaC Trust Resource Report for federally-sensitive biological resources known to occur in the vicinity of the Project site. In addition, regional floral and faunal field guides, such as A Manual of California Vegetation (2009) and The Jepson Manual (2012), were utilized in the identification of species and suitable habitats. Combined, the sources reviewed provided a comprehensive baseline from which to inventory the biological resources potentially occurring on the Project site and within the general area.

The project parcel is within the area covered by the North County Multiple Habitat Conservation Program (MHCP), which is a comprehensive conservation planning process that addresses the needs of multiple plant and animal species in North Western San Diego County. This City of Escondido is responsible for preparing its own subarea plan. The goal of the MHCP is to conserve approximately 19,000 acres of habitat, of which roughly 8,800 acres are already in public ownership and contribute toward the habitat preserve system for the protection of more than 80 rare, threatened, or endangered species.

The City has prepared a draft subarea plan, which encompasses the entire City boundary and approximately 3,000 acres of unincorporated areas of San Diego County land within the City's sphere of influence. A public review draft of the subarea plan was released in 2001, but has not been adopted. The project site is not located within any of the City's MHCP focused planning areas, in which some lands are proposed to be dedicated for open space and habitat conservation.

The project site is within an urban environment, and is disturbed from historic and ongoing disking. The project site habitat is characterized as Annual Brome Grassland. Typically, this habitat type is comprised of at least 60 percent cover of non-native brome grasses often interspersed with other non-native species.

Trees are location along the western, eastern and southern portions of the project site. These trees include non-native trees such as Peruvian pepper (*Schinus molle*), Brazilian pepper (*S. terebinthifolius*), Mexican fan palm (*Washingtonia robusta*), eucalyptus (*Eucalyptus* sp.), and coast live oak (*Quercus agrifolia*). A focused plant survey and oak tree survey were conducted by ESA biologists in October 2015, which further documented the flora on the project site including an evaluation if the special-status plants and/or protected oak trees occur on the project site.

a) **Less than Significant with Mitigation.** Table 1 in Appendix B of this IS/MND lists the special-status species with the potential to occur in the study area based on the suitability of the habitat.

Special-Status Plants

The potential for the project site to support special-status plant and wildlife species is low due to its location, size, level of disturbance, and poor quality habitat, with the exception of San Diego ambrosia and southern tarplant which are adapted to higher levels of disturbance. No special status plant species, including San Diego ambrosia and southern tarplant, were found within the project site during the initial site visit nor were they found during the focused plant surveys conducted by ESA in October 2015 within the blooming period for each species. Since neither of these species were observed on the project site and no other special-status plants occur on the project site, the proposed project will have a less than significant impact on special-status plants and no additional measures are required.

Special-Status Wildlife

The project site is not suitable to support resident populations of any special-status species, because of the small size of the project site and its proximity to urban development. Major roadways are located immediately adjacent to either side of the project site and these roads are a limitation for terrestrial wildlife species to utilize the project site. In addition, the project site is frequently disturbed by weed control activities, and the low, non-native herbaceous vegetation offers little cover for many species.

The project site is located within an urban and developed area, and does not lie within critical habitat for any special-status plant or wildlife species. In addition, no endangered, rare, threatened or special status plant species (or associated habitats) or wildlife species designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), or California Native Plant Society (CNPS) are known to occur on or adjacent to the site. Project implementation would not result in a substantial adverse effect, either directly or through habitat modifications, on any sensitive species, and impacts would not occur.

The existing trees on the project site provide suitable nesting habitat for avian species protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code 3500. Depending on the timing of construction, nesting may be occurring and project activities could have the potential to disrupt nesting activity, including causing the abandonment of nests and/or direct impacts to eggs and nestlings of bird species with small, well-hidden nests, which would violate the MTBA and Fish and Game Code. Potential impacts to nesting birds would result from disturbances such as habitat clearing, tree and earth removal, grading, digging, and equipment movement. Project activities are not expected to result in a substantial loss of sensitive habitat that would affect the ability of species to disperse and persist throughout the surrounding habitats and wider region. Implementation of the **Mitigation Measures BIO-1a** and **BIO-1b** would reduce the potential for injury or mortality of nesting birds during construction through construction timing, preconstruction nesting bird surveys, establishment of nesting buffers, and worker environmental training.

Mitigation Measures

Mitigation Measure BIO-1a: Proposed project activities (including, but not limited to, staging and disturbances to native and non-native vegetation, structures, and substrates) should occur outside of the avian breeding season, which generally runs from March 1st - August 15th, to avoid take of birds or their eggs.

Mitigation Measure BIO-1b: If avoidance of the avian breeding season is not feasible a qualified biologist, with experience in conducting breeding bird surveys, shall conduct a preconstruction clearance survey for active nests no more than 3 days prior to the initiation of project construction activities.

- If a protected native bird is found, flagging, stakes, and/or construction fencing shall be used to demarcate a buffer zone of 300 feet (or 500 feet for raptors) between the project construction activities and the nest. Project construction personnel, including all contractors working on site, will be instructed on the sensitivity of the area. The project proponent shall delay all project construction activities within the 300- (or 500-) foot buffer area until August 15th or until a qualified biologist has determined that the juveniles have fledged, the nest is vacated, and there is no evidence of a second attempt at nesting.
- If the biological monitor determines that a narrower buffer between the project construction activities and observed active nests is warranted, he/she shall submit a written explanation as to why (e.g., species-specific information; ambient conditions and birds' habituation to them; and the terrain, vegetation, and birds' lines of sight between the project activities and the nest and foraging areas) to the City. Based on the submitted information the City will determine whether to allow a narrower buffer.
- The qualified biological monitor shall be present on site during all grubbing and clearing of vegetation to ensure that these activities remain within the project footprint (i.e., outside the demarcated buffer) and that the flagging/stakes/fencing is being maintained, and to minimize the likelihood that active nests are abandoned or fail due to project construction activities. The biological monitor will send weekly monitoring reports to the City during the grubbing and clearing of vegetation, and will notify the City immediately if Project activities damage active avian nests.

b) **No Impact.** Riparian habitats are those occurring along the banks of rivers and streams. Sensitive natural communities are natural communities that are considered rare in the region by regulatory agencies, known to provide habitat for sensitive animal or plant species, or known to be important wildlife corridors. As described above, the project site is vacant disturbed land and does not contain riparian habitats or other sensitive natural communities. No riparian habitats or other sensitive natural communities occur adjacent to the project site. The project area is not included in any local or regional plans, policies, and regulations that identify riparian habitat or other sensitive natural community. Therefore, no impact would occur.

c) **No Impact.** Wetlands are defined under the federal Clean Water Act as land that is flooded or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include areas such as swamps, marshes, and bogs. The project site and surrounding area includes urban developed uses and does not contain natural wetlands. Therefore, the project site would not result in impacts to wetlands.

d) **Less than Significant Impact.** Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which

animals can travel from one habitat or resource area to another. The project site and surrounding area does not function as a wildlife movement corridor. Project implementation would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. Therefore, impacts would be less than significant.

e) **Less than Significant.** Implementation of the proposed project would remove all trees located on the project site. Section 33-1066, -1068, and -1069 of Article 55 (Grading and Erosion Control) of the City of Escondido Zoning Code regulates impacts to historically significant and/or mature trees, with a focus on oak tree protection. Protected trees are defined as "any oak (*Quercus* sp.) which has a ten (10) inch or greater trunk diameter at breast height (DBH), or any other species or individual specimen listed on the historic register, or determined to substantially contribute to the historic character of a property or structure listed on the local historic register, pursuant to Article 40 of the Escondido Zoning Code (2001)."

There are eight oak trees located along the southwestern project boundary. Of the eight trees along this fence line, at least three are protected in accordance with Article 55 of the City's Zoning Code based on their size. Adherence to the City's Municipal Code would reduce potentially significant impacts to oak trees to less than significant. If feasible, the affected oak trees may be salvaged and relocated. Compliance with the City Code would ensure a less than significant impact to protected trees.

f) **Less than significant.** The project area occurs within the City of Escondido Draft Subarea Plan under the North San Diego County MHCP. The Escondido Draft Subarea Plan identifies core conservation areas, of which the project site is at the southern edge of the Northeastern Habitat Area; however, the project site is not within a Focused Planning Area in which preserve areas may be designated. Since the project would avoid take of special–status species and would not result in the loss of sensitive habitat or jurisdictional resources, the proposed project would be consistent with the conservation measures defined in the MHCP.

References

California Department of Fish and Wildlife (CDFW). 2015. California Natural Diversity Database (CNDDB) Commercial version, Information dated February 27, 2015. Rarefind 5 query results for Central Valley and surrounding USGS 7.5-minute quadrangles.

California Native Plant Society (CNPS). 2015. Inventory of Rare and Endangered Plants (online edition v8-01a). California Native Plant Society, Sacramento, CA. Available at: www.cnps.org.

California Natural Diversity Data Base (CNDDB). 2015. State of California Resources Agency, Natural Heritage Division, Department of Fish and Game. Data Base Record Search for Information on Threatened, Endangered, Rare, or Otherwise Sensitive Species and Communities.

City of Escondido. 2001. Public Review Draft Escondido Subarea Plan – Implementing the Multiple Habitat Conservation Program. June 2001.

Environmental Science Associates (ESA), *City of Escondido MFRO Facility for Agriculture Project: Biological Resources Assessment*, prepared by Environmental Science Associates, January 2015.

San Diego Association of Governments (SANDAG). 2003. Final Multiple Habitat Conservation Plan (MHCP), Volume I (MHCP Plan), Volume II (Biological Analysis and Permitting Conditions), and Volume III (MHCP Monitoring and Management Plan).

Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
5. CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Discussion

The information in this section is based on the following sources: *Escondido MFRO Facility for Agriculture Phase I Cultural Resources Study* (Vader, 2015) and a paleontological database review conducted for the property by the San Diego Natural History Museum (SDNHM) (Anderson, 2015) included as **Appendix C**.

a) **Less than Significant Impact with Mitigation.** A records search at the South Coastal Information Center (SCIC), a historic map review, Native American contact, a geoarchaeological review, and a pedestrian cultural resources survey were conducted to identify cultural resources within the project site (Vader, 2015). The records search indicated that 12 cultural resources studies have been conducted within a ½-mile radius of the project site. Of these 12 previous studies, two appear to include portions of the project site. Approximately 50 percent of the project site has been included in previous cultural resources surveys. Furthermore, the records search indicated that total of 17 cultural resources have been previously recorded within a ½-mile radius of the project site, none of which are located within or immediately adjacent to (within 50 feet) the project site. Of the 17 resources, four are prehistoric archaeological sites (CA-SDI-016446, -016447, -016448, and -017306), three are historic-period archaeological sites (CA-SDI-016500, -017597, and -017658), and ten are historic-period built resources (P-37-018731, -018733, -030889 [Vista Irrigation Bench Flumes], 1032 Paula Way, 2115 East Lincoln Avenue, 2196 Montemar Avenue, 2225 East Lincoln Avenue, 2237 East Lincoln Avenue, 2421 East Washington Avenue, 2739 East Washington Avenue).

The historic map and aerial photograph review indicates that the immediate vicinity around the project site was largely used for agricultural purposes for the first three-quarters of the 20th century, with residential developments appearing by the 1980s. The project site has remained largely undeveloped and in use for agriculture, with the exception of some

structures in the central portion of the project site that were demolished or removed by the mid-1990s. The project site is currently vacant and undeveloped.

A Sacred Lands File (SLF) search for the project site was performed by the California Native American Heritage Commission (NAHC) on February 26, 2015. The SLF search results indicated that tribal cultural resources are known to be located within the vicinity of the project site on the Valley Center 7.5-minute topographic quadrangle; however, no specific information regarding the types or exact locations or the resources was provided. Follow-up contact with Native American groups and/or individuals identified by the NAHC as having affiliation with the project site vicinity was conducted via certified mail on April 16, 2015 and via phone on April 23 and 27, 2015. To date four responses have been received. In an email dated April 21, 2015, Chris Devers of the Pauma and Yuima Reservation Cultural Committee stated that he was unaware of any specific cultural resources within the vicinity of the project site, but requested that all project-related ground disturbance be monitored by archaeological and Native American monitors. Mr. Devers also requested that he be kept informed on the progress of the Project. In a letter dated April 23, 2051, Shasta Gaughen, Tribal Historic Preservation Officer for the Pala Band of Mission Indians, stated that the project is located outside of the Pala Band's Traditional Use Area (TUA), but requested that she be kept informed as to the progress of the project. In addition, Ms. Gaughen asked that she be provided with project updates, progress reports, and any documentation generated regarding previously reported or newly discovered sites. Ms. Gaughen also recommended that approved cultural monitors be on-site during all project-related ground-disturbing activities. In an email dated April 30, 2015, Carmen Mojado of the San Luis Rey Band of Mission Indians Cultural Resources Department requested a copy of the cultural reports and results of the SLF search. In a letter response received on May 13, 1015 (dated April 2, 2015), Rose Duro, writing on behalf of the Rincon Band of Luiseño Indians, stated that the project is located within the Aboriginal Territory of the Luiseño people, and also within in the Rincon's historic boundaries and TUA. Ms. Duro indicated that the Rincon believe there is potential for cultural materials and requested that the Rincon Cultural Resources Department be afforded the opportunity to provide a Native American monitor for the project.

The City has initiated Assembly Bill 52 (AB 52) consultation with the Native American groups who are traditionally and culturally affiliated with the geographic area of the proposed project, and who have requested such consultation in writing, including the San Luis Rey Band of Mission Indians, Rincon Band of Luiseno Indians and the Soboba Band of Luiseno Indians. The City mailed letters to the groups on August 26, 2015 inviting them to consult regarding potential impacts to tribal cultural resources. The Rincon Band of Luiseno Indians responded on October 6, 2015 requesting that "a Native American Monitor (preferably one that works for Rincon) will be present during all ground disturbing activities." The San Luis Rey Band of Mission Indians has responded to the invitation and met with the City on August 28, 2015. The San Luis Rey Band stated that their representatives will provide the City with written information and

mitigation measures regarding tribal cultural resources. On December 21, 2015, the San Luis Rey Band of Mission Indians submitted a request to the City requesting an extension on the comment period for the Draft MND, and requested continued consultation. The San Luis Rey Band of Mission Indians also provided Tribal Cultural Resource mitigation measures to be incorporated in the IS/MND. On February 8, 2016, the City and representatives from the San Luis Rey Band of Mission Indians met for a consultation meeting in which the City indicated it would be circulating the Draft IS/MND for public review again. The City also specified that the IS/MND would modify the mitigation measures for Tribal Cultural Resources to reflect the most current draft being discussed with the San Luis Rey Band of Mission Indians. On February 11, 2016, the City and the San Luis Rey Band of Mission Indians tribal representatives agreed on the final mitigation measures for Tribal Cultural Resources. Consequently, these mitigation measures would be incorporated into this MND and future projects as applicable.

A desktop geoarchaeological review was conducted in order to evaluate the potential for buried archaeological resources within the project site. The review indicates that while the project site might contain prehistoric archaeological resources, they are not likely to have become deeply buried through natural depositional processes. However, historic use of the project site for orchard and plow agriculture may have resulted in stratigraphic mixing, including horizontal and vertical movement of objects within the extent of agricultural disturbance. Furthermore, the project site may contain objects and features associated with historic agricultural use, including evidence of agricultural structures.

A cultural resources survey of the project site was conducted on April 30, 2015. All accessible portions of the project site with visible ground surface were surveyed in a systematic manner with transect intervals spaced no greater than 5 meters (approximately 16.5 feet) apart. Due to varying densities of the grasses, ground surface visibility varied throughout the project site: the east-central and southern portions of the project site had 10 to 15 percent visibility and the northern and west-central portions had 75 percent visibility. The northeastern boundary of the project site was paved with an approximate 3-foot wide strip of asphalt and had no visible ground surface.

One historic-period archaeological feature, MFRO-1, was documented as a result of the survey. The feature consists of an approximate 2.5 foot square, fragmented concrete block inscribed with children's names, ages, and handprints with a date in the center. The inscription read as follows (clockwise from north to south): "HELENE/ BR[?]NS / YRS. / (handprint) // ANTHONY / BOTHOF / [4] 1/2[YR]S / (handprint) // [RO]BERT / BOTHOF / 3YRS //196[7]".

Research on the names inscribed in the concrete block was conducted. Sources reviewed include the San Diego County Public Library and the Los Angeles Public Library databases, the City of Escondido Planning Department website, Ancestry.com database, and a general internet search. Anthony and Robert Bothof were the sons of Anthony C. Bothof, Jr. (b. 1940, d. 2014) and Constance A. Prins (b. 1940). Anthony Jr. came to the

United States in 1955. The Bothof Family, including Anthony Sr., his wife Alida, and eight children, left Holland in search of better wages and settled in Hollandale, Minnesota. Anthony Sr. was a baker by trade. Anthony Jr. (also known as Tonnni or Tony) expressed in a newspaper article that he would like to become a butcher. Anthony Jr. and Constance were married on March 24, 1961 in San Diego. Anthony was born on February 8, 1962 and Robert was born on March 8, 1963 (Ancestry.com, 2015). The internet search revealed that Anthony C. Bothof, Jr. was president of Bothof's Butchering, which was incorporated on March 22, 1971. The address provided for Bothof's Butchering was 2512 East Washington Avenue, currently a single-family residence bounding the southeast portion of the project site. No additional information could be obtained about his sons Anthony and Robert, and the identity of the third child, Helene, could not be established.

Resource MFRO-1 was evaluated for the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) under Criteria A/1-D/4, and for the City of Escondido Local Register of Historic Resources under Criteria 1 and 11. Research did not reveal that the Bothof Family is associated with events that have made a significant contribution to the broad patterns of our history and, therefore, MFRO-1 does not appear to be eligible for the NRHP/CRHR under Criterion A/1. Although the feature could be connected to a specific family, none of the individuals identified appear to have made significant contributions to our past and, therefore, MFRO-1 does not appear to be eligible for the NRHP/CRHR under Criterion B/2. Resource MFRO-1 does not possess distinctive architectural characteristics, features, or construction methods, nor is there evidence that is was constructed by builders/designers that are considered master craftsmen, and, therefore, MFRO-1 does not appear to be eligible for the NRHP/CRHR under Criterion C/3. While resource MFRO-1 contained some information regarding the Bothof Family, the data potential was exhausted through its recordation and the information gleaned though the archival research does not appear to be significant information important to history, and, therefore, MFRO-1 does not appear to be eligible for the NRHP/CRHR under Criterion D/4. Similarly, resource MFRO-1 does not appear to be associated with persons who significantly contributed to the culture, history, prehistory, or development of the City of Escondido (Criterion 1), nor does MFRO-1 appear to warrant special recognition due to size, condition, uniqueness or aesthetic (Criterion 11), and, therefore, MFRO1 is recommended not eligible for listing in the City of Escondido Local Register of Historic Resources. As such, MFRO-1 does not qualify as a historic property under Section 106 of the NHPA or a historical resource under CEQA.

No other cultural resources, historic-period built or archaeological, were identified in the project site as a result of archival research or survey. Although the NAHC SLF search results indicate that Native American cultural resources are known to be present within the vicinity of the project site, Native American respondents have not indicated that there are any known resources within the Project site. In addition, the geoarchaeological review indicates that, if present, archaeological resources would tend to be either on the surface, or shallowly buried and disturbed by past agricultural practices. Nevertheless, since the

project includes ground-disturbing activities, the project may encounter subsurface archaeological resources that qualify as historical resources and could cause a substantial adverse change in the significance of a historical resource as defined in §15064.5. Impacts to historical resources would be reduced to a less-than-significant level with the incorporation of **Mitigation Measures CUL-1** through **-10**.

Mitigation Measures

Mitigation Measure CUL-1: The City of Escondido Planning Division ("City") recommends the applicant enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe that is traditionally and culturally affiliated with the Project Location ("TCA Tribe") prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources, and (2) to formalize protocols and procedures between the Applicant/Owner and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains, funerary objects, cultural and religious landscapes, ceremonial items, traditional gathering areas and cultural items, located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.

Mitigation Measure CUL-2: Prior to issuance of a grading permit, the applicant shall provide written verification to the City that a qualified archaeologist and a Native American monitor associated with a TCA Tribe have been retained to implement the monitoring program. The archaeologist shall be responsible for coordinating with the Native American monitor. This verification shall be presented to the City in a letter from the project archaeologist that confirms the selected Native American monitor is associated with a TCA Tribe. The City, prior to any pre-construction meeting, shall approve all persons involved in the monitoring program.

Mitigation Measure CUL-3: The qualified archaeologist and a Native American monitor shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.

Mitigation Measure CUL-4: During the initial grubbing, site grading, excavation or disturbance of the ground surface, the qualified archaeologist and the Native American monitor shall be on site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of tribal cultural resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.

Mitigation Measure CUL-5: In the event that previously unidentified tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.

Mitigation Measure CUL-6: If a potentially significant tribal cultural resource is discovered, the archaeologist shall notify the City of said discovery. The qualified archaeologist, in consultation with the City, the TCA Tribe and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the tribal cultural resource's treatment and disposition shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor and be submitted to the City for review and approval.

Mitigation Measure CUL-7: The avoidance and/or preservation of the significant tribal cultural resource and/or unique archaeological resource must first be considered and evaluated as required by CEQA. Where any significant tribal cultural resources and/or unique archaeological resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, then a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor, and shall be subject to approval by the City. The archaeological monitor, in consultation with the Native American monitor, shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.

Mitigation Measure CUL-8: As specified by California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted on-site and in situ where they were discovered by a forensic anthropologist, unless the forensic anthropologist and the Native American monitor agree to remove the remains to an off-site location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of

the remains in accordance with California Public Resources Code section 5097.98. The Native American remains shall be kept in-situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur on-site in the presence of a Native American monitor.

Mitigation Measure CUL-9: If the qualified archaeologist elects to collect any tribal cultural resources, the Native American monitor must be present during any testing or cataloging of those resources. Moreover, if the qualified Archaeologist does not collect the cultural resources that are unearthed during the ground disturbing activities, the Native American monitor, may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions. Any tribal cultural resources collected by the qualified archaeologist shall be repatriated to the TCA Tribe. Should the TCA Tribe or other traditionally and culturally affiliated tribe decline the collection, the collection shall be curated at the San Diego Archaeological Center. All other resources determined by the qualified archaeologist, in consultation with the Native American monitor, to not be tribal cultural resources, shall be curated at the San Diego Archaeological Center.

Mitigation Measure CUL-10: Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner to be submitted with the report. The report will include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.

b) **Less than Significant Impact with Mitigation Incorporated.** As discussed above under impact statement (a), one historic-period archaeological feature, MFRO-1, was documented in the project site. Resource MRFO-1 does not appear to be of exceptional significance and therefore is not considered a unique archaeological resource under CEQA.

As discussed above, no other archaeological resources were identified in the project site as a result of archival research or survey and unique archeological resources are not anticipated to be located within the project site. Nevertheless, since the project includes ground-disturbing activities, the project may encounter subsurface archaeological resources that qualify as unique archaeological resources and could cause a substantial adverse change in the significance of a unique archaeological resource as defined in §15064.5. Impacts to unique archaeological resources would be reduced to a less-than-significant level with the incorporation of **Mitigation Measures CUL-1** through **-10**.

Mitigation Measures

Implement Mitigation Measures CUL-1 through -10.

c) **Less than Significant with Mitigation Incorporated.** A paleontological records search was conducted by the SDNHM on April 2, 2015 (Anderson, 2015). The results indicate that no fossil localities are located within a 1-mile radius of the project site; however, the project site is underlain by late to middle Pleistocene (approximately 10,000 to 780,000 years ago) old alluvial flood plain deposits (Qoa), which is confirmed by Kennedy et al. (2007) findings. Jefferson (1991) lists more than 30 Pleistocene localities in San Diego County from old alluvial flood plain deposits (Qoa), which have produced significant fossil vertebrates including fishes, amphibians, reptiles, and mammals. Old alluvial flood plain deposits (Qoa) are considered to have a moderate paleontological sensitivity (Anderson, 2015).

Since the old alluvial flood plain deposits are mapped at the surface, there is a moderate sensitivity for potential to contain paleontological resources. Any amount of ground disturbance within the project site has the potential to impact unknown and undiscovered paleontological resources. However, proposed ground disturbance would be minimal, and the City of Escondido and the general project area are not known to have produced any significant or substantial paleontological discoveries. Additionally, previous grading/ground disturbance around the project area did not uncover paleontological resources. Therefore, the potential for discovery of unknown fossils during project-related ground disturbance activities is considered relatively low to negligible based on previous studies and ground disturbance in the area. Mitigation Measure CUL-11 would ensure the protection and proper handling of paleontological resources, should any unexpected resource be uncovered during ground disturbance activities.

Mitigation Measures

Mitigation Measure CUL-11: In the event of unanticipated discovery of paleontological resources, the City shall cease ground-disturbing activities within 100 feet of the find until it can be assessed by a qualified paleontologist. The qualified paleontologist shall assess the find, implement recovery measures if necessary, and determine if paleontological monitoring is warranted once work resumes.

d) **Less than Significant Impact with Mitigation Incorporated.** No human remains are known to exist within or adjacent to the project site and it is unlikely that the project would disturb unknown human remains. However, because the project involves ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains. Impacts to human remains would be reduced to a less-than-significant level with the incorporation of **Mitigation Measure CUL-8**, which requires compliance with California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98.

Mitigation Measures

Implement Mitigation Measures CUL-8.

e) **Less than Significant Impact with Mitigation Incorporated.** The SLF search prepared by the NAHC indicated that tribal cultural resources are located in the vicinity of the project, but did not provide specific information on the types of resources or their location. The follow-up consultation with the groups identified by the NAHC did not result in the identification of tribal cultural resources within the project area. The City of Escondido has a list of three tribes that are to be contacted for AB 52 consultation, including San Luis Rey Band of Mission Indians, Rincon Band of Luiseno Indians and the Soboba Band of Luiseno Indians. AB 52 letters were mailed to each of the tribes on August 26, 2015. The City of Escondido received a response from the San Luis Rey Band of Mission Indians requesting consultation on August 26, 2015 and from Rincon Band of Luiseno Indians requesting consultation on September 14, 2015. The Soboba Band of Luiseno Indians responded on September 22, 2015 that they would defer to the other tribal groups that are in closer proximity to the project, as such, no additional consultation with this tribe is required. The City of Escondido met with the San Luis Rey tribal representative on Friday August 28, 2015 to discuss the project. San Luis Rey Band of Mission Indians indicated that the City would receive written information and mitigation measures from their representatives, but as of the date of publication was not received. The City of Escondido telephone conferenced with the Rincon Band of Luiseno Indians tribal representative on Tuesday October 6, 2015 to discuss the project. The Rincon Band of Luiseno Indians tribal representatives requested that a Native American Monitor (preferably one that works for Rincon) will be present during all ground disturbing activities and that they are provided with a continued update on the status of the project. **Mitigation Measure CUL-1 through -4** requires that both an archaeological monitor (working under the direct supervision of the qualified archaeologist) and a Native American monitor shall observe all initial ground-disturbing activities. The Native American monitor shall be selected from amongst the Native American groups identified by the NAHC as having affiliation with the Project site.

Although no tribal cultural resources have been identified within the project area, as discussed above, there is still the possibility of encountering subsurface archaeological resources, which could also be considered tribal cultural resources. Implementation of **Mitigation Measures CUL-1 through -10** would reduce impacts to archaeological resources that could be considered tribal cultural resources to less than significant.

References

Anderson, Nikki, *Paleontological Records Search for the Escondido MFRO Facility for Agriculture Project (D140488.00)*, letter report to Arabesque Said-Abdelwahed, Environmental Science Associates, from Nikki Anderson, Lead Fossil Preparator, Department of Paleo Services, San Diego Natural History Museum, April 2, 2015.

Jefferson, G.T., *A catalogue of Late Quaternary vertebrates from California*, Revised 18 May, 2012 Part 1 and 2: Mammals and Lower Vertebrates, 1991.

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Society for Vertebrate Paleontology (SVP), *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*, Electronic resource, http://vertpaleo.org/PDFS/8f/8fe02e8f-11a9-43b7-9953-cdcfaf4d69e3.pdf, accessed September 30, 2014, 2010.

U.S. Department of the Interior, *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (As Amended and Annotated) 2008*, www.nps.gov/history/local-law/arch_stnds_0.htm, accessed November 4, 2014.

Vader, Michael, *City of Escondido MFRO Facility for Agriculture Project: Phase I Cultural Resources Study*, prepared by Environmental Science Associates, January 2015.

Geology, Soils, and Seismicity

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

Discussion

a.i) **No Impact.** Seismically induced surface or ground rupture occurs when movement on a fault deep within the earth breaks through to the surface as a result of seismic activity. Fault rupture almost always follows preexisting faults, which are zones of weakness. Sudden displacements are more damaging to structures because they are accompanied by shaking. Under the Alquist-Priolo Earthquake Fault Zoning Act (Act), which was passed in 1972, the California State Geologist identifies areas in the State that are at risk from surface fault rupture. The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. That requires the State Geologist to establish regulatory zones, known as Alquist-Priolo Earthquake Fault Zones, around the surface traces of active faults and to issue appropriate maps that identify these zones.

The project site is not in the vicinity of an earthquake fault, and is not affected by a state-designated AP Earthquake Fault Zone (City of Escondido, 2012). Therefore, project

implementation would not expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault.

a.ii) **Less than Significant.** No active faults are known to cross the project site, although several active faults pass through the Peninsular Ranges Province, which encompasses all of San Diego County. The active Rose Canyon fault is approximately 18 miles west of the project site, and the active Elsinore fault is approximately 23 miles east of the project site. The project site is within a seismically active area and could potentially be subject to strong seismic ground motion. The proposed project would comply with the seismic design parameters contained in the California Building Code (CBC) seismic requirements which contain provisions for earthquake safety based on factors including occupancy type, the types of soil onsite, and the probable strength of ground motion (City of Escondido). Compliance with these construction and building safety design standards would be required prior to building permit approval, which would reduce potential impacts associated with ground shaking at the project site to a less than significant level.

a.iii) **No Impact.** Liquefaction occurs in saturated and loose soils in areas where the groundwater table is 50 feet or less below ground surface (bgs). During an earthquake, a sudden increase in high core water pressure can cause soils to lose strength and behave as a liquid. According to the City of Escondido's General Plan EIR, the proposed project would not be on a liquefaction hazard area (Escondido, 2012). Therefore significant impacts associated with liquefaction are not anticipated from project implementation.

a.iv) **No Impact.** Landslides are characterized as deep-seated ground failures, in which a large section of a slope detaches and slides downhill. The proposed project is not located in an area with soils subject to potential landslides, and is not located on land that slopes greater than 25 percent according to the City of Escondido's General Plan EIR (Escondido, 2012). As a result, impacts related to landslides would not occur.

b) **Less than Significant.** Soil exposed by construction activities including excavation could be subject to erosion if exposed to heavy rain, winds, or other storm events. Construction of the proposed project would involve a variety of heavy equipment associated with intensive earthwork, structural and paving phases. The maximum depth for excavation would be 25 feet deep. The building foundations would be slabs on grade supported with a six-inch layer of untreated aggregate base overlain by a ten-millimeter thick impermeable plastic membrane. The tank and building foundations would be supported on three feet of geogrid reinforced soil. Onsite soils displaced by grading could be used for fill, compacted to 90 percent of its maximum dry density. A Stormwater Pollution Prevention Plan (SWPPP) would be prepared in compliance with the Construction General Permit. The SWPPP would identify erosion control and sediment control best management practices (BMPs) that would be implemented to minimize the occurrence of soil erosion or loss of topsoil, as described in impact discussion 9, Hydrology and Water Quality. Much of the project area would be paved, with some landscaping around the project area to screen facility components. Landscape would consist of low maintenance,

low demand and fast growing plantings (Black & Veatch, 2014). Therefore impacts related to soil erosion or the loss of topsoil would be less than significant.

c) **Less than Significant.** The project site would not be located within an area that is subject to landslides or liquefaction (City of Escondido, 2012). Thus, impacts to landslides, liquefaction and lateral spreading would not occur. Subsidence occurs when a void is located or created underneath the ground surface causing the surface to collapse. Underground voids that potentially cause subsidence include tunnels, wells, covered quarries, and caves beneath a surface. In addition, subsidence usually occurs as a result of excessive groundwater pumping or oil extraction. The proposed project does not include any groundwater pumping or oil extraction. According to the 2004 Multi-jurisdictional Hazard Mitigation Plan (URS), the underlying geologic formations in the project area are mostly granitic and have a very low potential of subsidence (City of Escondido, 2012). The proposed project would comply with the CBC standards in design and constructionand regulations related to soil stability. Adherence to applicable buildings codes through the City's building permit process would result in less than significant impacts involving unstable geologic units or soils.

d) **No Impact.** Expansive behavior in soils is attributable to the water holding capacity of clay materials, which can adversely affect structural integrity through shifting of foundations or supporting materials during the expansive process. Based on information from the City of Escondido's General Plan EIR, the project site would not be located on or near expansive soils, therefore there are no impacts related to expansive soils.

e) **No Impact.** No septic tanks or alternative wastewater disposal systems exist or are proposed on the project site. No impact would occur.

References

Black & Veatch, *MFRO and AWT Facilities Conceptual Design Report*, 2014.

City of Escondido, General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, Geology and Soils, 2012. https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Geology.pdf.

City of Escondido, Municipal Code Chapter 6, Article 1. http://www.qcode.us/codes/escondido/view.php?topic=6-1-6_1_2&frames=on

City of Escondido, General Plan, May 2012.

Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
7. GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion

a) **Less Than Significant.** Gases that trap heat in the atmosphere are called GHGs. The major concern with GHGs is that increases in their concentrations are causing global climate change. Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to human activities, most in the scientific community agree that there is a direct link between increased emissions of GHGs and long term global temperature increases.

The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). Because different GHGs have different warming potential and CO_2 is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO2 equivalents (CO_2e). For example, SF_6 is a GHG commonly used in the utility industry as an insulating gas in circuit breakers and other electronic equipment. SF_6, while comprising a small fraction of the total GHGs emitted annually world-wide, is a much more potent GHG with 22,800 times the global warming potential as CO_2. Therefore, an emission of one metric ton (MT) of SF6 could be reported as an emission of 22,800 MT of CO_2e. Large emission sources are reported in million metric tons (MMT) of CO_2e.[3]

The City of Escondido has established an annual threshold of significance for GHG emissions of 2,500 MT of CO_2e in the City's Municipal Code, Chapter 33 Article 47, Coordination of CEQA (Sec. 33-924). This threshold is based on the City's Climate Action Plan as well as the County of San Diego District's thresholds. This threshold has been adopted for the purpose of determining significance under CEQA.

The project would generate GHG emissions from a variety of sources. First, GHG emissions would be generated during construction. Once fully operational, the project's

[3] A metric ton is 1,000 kilograms; it is equal to approximately 1.1 U.S. tons and approximately 2,204.6 pounds.

operations would generate GHG emissions from both area sources and mobile sources. Indirect source emissions generated by the project include electrical consumption, water and wastewater usage (transportation), and solid waste disposal. Mobile (direct) sources of air pollutants associated with the project would consist of motor vehicles trips generated by the monthly visits of vendors and staff.

Construction-related GHG emissions for the project were estimated using the same assumptions as the air quality analysis and assumptions and modeling output are included in Appendix D to this document. Total estimated construction-related GHG emissions for the proposed Project are 1,088.53 $MTCO_2e$. Because the project is less than a year to construct, the emissions from construction are added directly to the operational emissions to determine maximum annual GHG emissions for the project.

Operational area and indirect sources associated with the project would primarily result from electricity and natural gas consumption, water transport (the energy used to pump water to and from the project site)[4], and solid waste generation. GHG emissions from electricity consumed on the project site would be generated offsite by fuel combustion at the electricity provider. GHG emissions from water transport are also indirect emissions resulting from the energy required to transport water from its source. In addition, the project site would generate a minimal amount of emissions from mobile sources generated by the monthly maintenance and deliveries to the project site.

The estimated operational GHG emissions resulting from project implementation are shown in Table 7-1. Additionally, the project's amortized construction-related GHG emissions are added to the operational emissions estimate in order to determine the project's total annual GHG emissions.

As shown in Table 7-1, the total annual emissions of GHGs from the construction and operation of the project would be less than the City's adopted threshold. Therefore, the net increase in GHG emissions resulting from project implementation is considered to be less than significant and no mitigation is required.

4 Water transport refers to the water consumed onsite in restrooms or as part of the process, not the water being treated onsite.

TABLE 7-1
ESTIMATED CONSTRUCTION AND OPERATIONS-RELATED GHG EMISSIONS

Emission Source	Estimated Emissions CO2e (MT/yr)
Construction	
Annual Construction	1,088.53
Operational	
Area Sources	0.00
Energy Consumption[a]	102.89
Mobile Sources	24.47
Solid Waste	3.12
Water Consumption[b]	10.15
Total Phase 1 Emissions	140.62
Total Project Emissions	**1,229.15**
City Threshold	**2,500**
Significant?	**No**

CO_2e= carbon dioxide equivalent; MT/yr = metric tons per year;

[a] The energy-related GHG emissions, as estimated by CalEEMod, use 2008 Title 24 energy usage rates. However, according to the CEC, buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards would be 15 percent more energy efficient than the 2008 Standards. As such, this additional reduction in energy consumption was accounted for in the Project's estimated GHG emissions associated with energy consumption.

[b] GHG emissions reductions associated with water use resulting from compliance with CALGreen requirements, which requires a minimum 20 percent reduction in indoor water use and the provision of irrigation controllers for outdoor water use, were accounted for in CalEEMod model run.

Source: ESA CalEEMod Modeling 2015

b) **Less Than Significant.** Out of the Recommended Actions contained in CARB's Scoping Plan, the actions that are most applicable to the Project would be Actions E-1 (increased Utility Energy efficiency programs including more stringent building and appliance standards), GB-1 (Green building), and W-1 (Increased water use efficiency). CARB Scoping Plan Action E-1, together with Action GB-1 (Green Building), aims to reduce electricity demand by increased efficiency of Utility Energy Programs and adoption of more stringent building and appliance standards, while Action W-1 aims to promote water use efficiency. The project would be designed to comply with the CalGreen Code to ensure that the new non-residential uses would use resources (energy, water, etc.) efficiently and significantly reduce pollution and waste. Therefore, the project would be consistent with the Scoping Plan measures through incorporation of stricter building and appliance standards.

The City of Escondido adopted their Climate Action Plan (CAP) on December 4, 2013. As part of the CAP the City established an annual threshold of 2,500 $MTCO_2e$ for smaller project as well as screening tables by which larger project can implement reduction strategies and determine compliance with the CAP. As discussed under 8a above, the

project's emissions would not exceed the 2,500 $MTCO_2e$ annual emissions threshold and therefore is seen to be consistent with the CAP without the implementation of reduction measures.

As both the Scoping Plan and the CAP are designed to help the region and the City, respectfully, comply with AB 32, compliance with these plans ensures that the project would be in compliance with AB 32. Therefore, as implementation of the project would not hinder or adversely affect the statewide attainment of GHG emission reduction goals of AB 32, this impact would be less than significant. No mitigation is required.

References

Escondido, City of. 2015. *Escondido Municipal Code. Sec. 33-214. Coordination of CEQA, quality of life standards, and growth management provisions.* March.

Escondido, City of. 2013a. *City of Escondido Adopted Climate Action Plan.* December 4.

Escondido, City of. 2013b. *City of Escondido Greenhouse Gas Emissions Adopted CEQA Thresholds and Screening Tables.* December 4.

San Diego, County of. 2013. *County of San Diego Guidelines for Determining Significance And Report Formant and Content Requirements Climate Change.* March 19.

Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
8. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Discussion

a) **Less than Significant.** A hazardous material is defined as any material that, due to 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. Hazardous materials include, but are not limited to, hazardous substances, hazardous wastes, and any material that a business or the local implementing agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Construction activities associated with the proposed project would require transportation and use of limited quantities of fuel, oil, sealants, and other hazardous materials related to construction. Construction activities would occur for approximately 12 months within the

project site. The use of hazardous materials and substances during construction would be subject to federal, state, and local health and safety requirements for handling, storage, and disposal. As a result, hazardous material impacts related to construction activities would be less than significant.

Operation of the proposed facilities would include the storage of sodium hypochlorite, liquid ammonium sulfate, sulfuric acid, sodium bisulfite, threshold inhibitor, and sodium hydroxide (Black & Veatch, 2014). These systems would be located outside the main process buildings with separate containment areas. The storage tanks would be designed in accordance with applicable hazardous materials storage regulations for long-term use. Other waste streams such as liquid collected in the sumps, if determined to be hazardous, would be pumped using a portable pump to a tank truck to be disposed of as a hazardous material at a State-permitted treatment or disposal facility. The delivery and disposal of chemicals to and from the project site would occur in full accordance with all applicable federal, state, and local regulations.

A Hazardous Materials Business Plan (HMBP) must be prepared for the proposed project as required by the County of San Diego Department of Environmental Health. The HMBP is intended to minimize hazards to human health and the environment from fires, explosions, or an unplanned release of hazardous substances into air, soil, or surface water (City of Escondido, 2012). Compliance with all applicable federal, state and local regulations regarding the use and transport of hazardous materials, and implementation of the HMBP, potential impacts to the public or the environment related to the transport, use, or disposal of hazardous materials would be less than significant.

b) **Less than Significant.** As discussed above in discussion 3.8(a), limited quantities of hazardous materials such as gasoline, diesel, oils, and lubricants may be required to operate the construction equipment. Construction activities would be short-term, and the use of these materials would cease once construction is complete. The hazardous substances used during construction would be required to comply with existing federal, state and local regulations regarding the use and disposal of these materials. In the event of an accidental release during construction containment and clean up would be in accordance with existing applicable regulatory requirements.

Project operation would include the transport and use of hazardous materials onsite. A HMBP must be prepared for the proposed project as required by the County of San Diego Department of Environmental Health. The HMBP is intended to minimize hazards to human health and the environment from fires, explosions, or an unplanned release of hazardous substances into air, soil, or surface water (City of Escondido, 2012). Compliance with all applicable federal, state and local regulations regarding the use and transport of hazardous materials, and the implementation of the HMBP, potential impacts to the public or the environment related to reasonably foreseeable accident conditions related to hazardous materials would be less than significant.

c) **No Impact.** The proposed project is not located within one-quarter mile of an existing or proposed school. The school nearest to the project site is Glen View Elementary School, and it is approximately 0.30 miles southwest of the project site. No impacts would occur.

d) **No Impact.** The project area was not identified as having permitted underground storage tanks (PUST) or leaking underground storage tanks (LUST), nor is it listed as a hazardous materials site under the State Water Resources Control Board (SWRCB) GeoTracker and Department of Toxic Substances Control (DTSC) EnviroStor databases. Therefore, the proposed project would not create a significant hazard to the public or the environment. No impacts would occur.

e) **No Impact.** The proposed project is not located within an airport land use plan or within two miles of a public airport or public use airport. The nearest public airport is the Ramona Airport that is located approximately 10.5 miles to the southeast from the project site. No impact would occur.

f) **No Impact.** The proposed project is not located within the vicinity of a private airstrip. The nearest private airport is Lake Wohlford Resort Airstrip located approximately 3 miles northeast of the project area. No airstrip related hazard impacts would occur.

g) **Less than Significant.** The proposed project would not impair implementation of or physically interfere with adopted emergency response plans or emergency evacuation plans. There would be no installation of pipelines or other facilities within right-of-ways surrounding the project site, making the possibility of interfering with evacuation routes highly unlikely. El Norte Parkway is identified in the City's General Plan EIR as an emergency evacuation route; however the proposed project would not impact the roadway in a way that would impede emergency evacuations. All project facilities would be contained within the boundaries of the site, and proposed project-related vehicles would not block existing street access to the site. Therefore, no impacts related to an emergency evacuation plan would occur.

h) **Less than Significant.** According to the California Department of Forestry and Fire Protection's Fire Hazard Severity Zone (FHSZ) maps, the proposed project is located within a moderate FHSZ, which is the same designation as the majority of the urbanized downtown Escondido area (City of Escondido, 2012). The project site is located in an urbanized environment, and is surrounded by residential neighborhoods and commercial areas. There are no wildlands or open spaces immediately adjacent to the project site, which significantly reduces the risk of wildland fire damage to people and structures in the area. The proposed project would adhere to the City of Escondido's Fire Code, along with the 2013 California Fire Code, and the County of San Diego Fire Code. Plans for the project would be approved by the fire marshal prior to construction to ensure compliance with applicable codes. Therefore, the proposed project is not anticipated to expose people or structures to wildland fires, and impacts would be less than significant.

References

Black & Veatch, *MFRO and AWT Facilities Conceptual Design Report*, 2014.

City of Escondido, General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, Hazards and Hazardous Materials, 2012. https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Hazards.pdf

City of Escondido, Municipal Code Chapter 11. http://www.qcode.us/codes/escondido/.

City of Escondido, General Plan, May 2012.

Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
9. HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☐	☒
e) 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?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

Discussion

a) **Less than Significant.** The proposed project would not violate any water quality standards or waste discharge requirements. The proposed project includes the construction of a recycled water treatment facility to provide water for agricultural activities. Soil exposed by construction activities including excavation could be subject to erosion if exposed to heavy rain, winds, or other storm events. Construction of the proposed project would involve a variety of heavy equipment associated with intensive earthwork, structural and paving phases. The maximum depth for excavation would be 25

feet deep. Onsite soils displaced by grading could be used for fill, compacted to 90 percent of its maximum dry density. A Stormwater Pollution Prevention Plan (SWPPP) would be prepared in compliance with the Construction General Permit. The SWPPP would identify erosion control and sediment control best management practices (BMPs) that would be implemented to minimize the occurrence of soil erosion or loss of topsoil. Therefore no impacts related to water quality would occur; and impacts would be less than significant.

The State Water Resources Control Board (State Water Board) adopted General Order WQ 2014-0090-DWQ on June 3, 2014 to streamline permitting for recycled water use. Recycled water is often an underutilized resource, and the General Order allows the use of tertiary disinfected, secondary disinfected, and in some cases secondary undisinfected recycled municipal wastewater for title 22 approved non-potable uses such as agricultural irrigation, landscape irrigation, dust control, and cooling tower make-up water. Recycled water use for irrigation is limited to agronomic application rates; therefore, the amount of recycled water that could potentially reach groundwater will be limited.

The Order is consistent with the Recycled Water Policy adopted by the State Water Board in 2009. Coverage under the General Order is limited to treated municipal wastewater for non-potable uses. It does not apply to the use of recycled water for groundwater recharge, or the disposal of treated wastewater by means of percolation ponds. To obtain coverage under the Order, the City would be required to submit a Notice of Intent and an application fee to the San Diego Regional Water Quality Control Board. The operation phase of the proposed project would comply with the above identified NPDES Permit requirements to protect water quality during operation. Therefore, no substantial adverse impacts to water quality would occur; therefore, impacts would be less than significant.

b) **No Impact.** The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. The proposed project includes construction of a recycled water treatment facility to provide water for agricultural activities, and would not result in any increased use or extraction of local groundwater. In fact, the proposed project would have a positive impact to the groundwater table, since the recycled water would off-set existing potable water uses which do include groundwaters. The recycled water would be stored in the proposed 800,000 gallon tank and distributed to local farmers nearby for agricultural use. No adverse impact to groundwater supplies would occur.

c) **Less than Significant.** The proposed project would not alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site. No streams or rivers exist within the proposed project area as the project site is located within an already urbanized environment. The proposed project would not involve activities that could potentially impact local drainage patterns such as substantial grading,

topographic alteration, or impacts to drainages or storm drain facilities. Adherence to all NPDES MS4 Permit regulations, including applicable BMPs, would ensure construction and operation does not result in erosion or flooding impacts. The proposed project would include implementation of landscape features, including bio-retention areas and other BMPs would also be incorporated into landscape design for the driveway approaching Washington Avenue. These BMPs would reduce the discharge of runoff from the project site. Therefore, the proposed project would not alter the existing drainage pattern of the project site or area and substantial erosion of siltation would not occur. Impacts would be less than significant.

d) **No Impact.** The proposed project would not alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. The project site is surrounded by a residential environment with no existing natural drainage features. The proposed project would include implementation of landscape features, including bio-retention areas and other BMPs to capture runoff from the project site. The proposed project would not increase the rate or amount of surface runoff, and the proposed project would not result in on- or off-site flooding. No impacts related to flooding hazards would occur.

e) **Less than Significant.** The proposed project would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. The existing stormwater drainage system along Washington Avenue would collect any runoff from the project site, which is expected to be very minimal due to the nature of the proposed project. Runoff may occur from construction activities on the project site, but adherence to all regulations and implementation of BMPs pursuant to the SWPPP would ensure the project does not result in pollution sources in runoff. Impacts would remain less than significant.

f) **Less than Significant.** The proposed project would not substantially degrade water quality. Construction activities would comply with a SWPPP and implement BMPs to minimize impacts to water quality. Impacts related to the degradation of water quality would remain less than significant.

g) **No Impact.** The proposed project is a recycled water facility and does not include the construction of housing therefore there would be no impact.

h) **No Impact.** The proposed project is not located within a 100-year flood plain as mapped on a federal Flood Insurance Rate Map or other flood hazard delineation map (FEMA, 2015). No impacts related to impedance or redirection of flood flows would occur.

i) **No Impact.** The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam. The project site is not located within a 100-year flood plain, and

falls outside of all dam failure inundation areas within the City of Escondido (City of Escondido, 2012). No impacts would occur relating to loss, injury, or death involving flooding.

j) **Less than Significant.** Tsunamis are usually caused by displacement of the ocean flood causing large waves and are typically generated by seismic activity. The proposed project is located approximately 17 miles from the Pacific Ocean, therefore a tsunami hazard is not present for the project site. A seiche is a standing wave in an enclosed or partly enclosed body of water. Seiches are normally caused by earthquake activity, and can affect harbors, bays, lakes, rivers, and canals. The nearest body of water, Lake Dixon, is approximately four miles away, which is too far to present impacts by a seiche event. Lastly, mudflow is a mixture of soil and water that runs like a river of mud down a hillside and is usually generated by heavy rainfall. The proposed project is located within a developed residential neighborhood and would not be exposed to mudflow from nearby slopes. Impacts relating to tsunamis, seiches, or mudflow would be less than significant.

References

City of Escondido, General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, Hydrology and Water Quality, 2012. https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Hydrology.pdf.

Federal Emergency Management Agency, Flood Map Service Center, 2015. https://msc.fema.gov/portal/search?AddressQuery=Escondido%2C%20ca.

State Water Resources Control Board, Order WQ 2014-0090-DWQ General Waste Discharge Requirements For Recycled Water Use, June 3, 2014.

Land Use and Land Use Planning

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
10.	**LAND USE AND LAND USE PLANNING — Would the project:**				
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion

a) **No Impact.** The physical division of an established community typically refers to the construction of a linear feature, such as an interstate highway or railroad tracks, or 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. The project site is within an urban area developed with residential, religious, roadway, and commercial uses. The proposed project consists of construction of a MFRO facility with two industrial structures on a 3.25 acre site that is zoned as Single-Family Residential R-1-6. The MFRO Facility buildings would not divide the existing community, as the project site is currently vacant. No changes to land uses would occur with the proposed project, and the proposed project would not change roadways or areas outside of the project site. Thus, the proposed project would not physically divide an established community and no impacts would occur.

b) **Less than Significant.** The project site has a land use designation of U1 (Urban I) and is zoned as Single-Family Residential R-1-6, which identifies the area for single family dwellings and related accessory uses on a lot size of 6,000 square feet (City of Escondido, 2012). The adjoining areas are also designated U1 (Urban I) and is zoned as Single-Family Residential R-1-6. Because the project site is located within a residentially zoned area, a Conditional Use Permit would be required for construction and operation of a MFRO facility from the City of Escondido Planning Commission. The Conditional Use Permit would only be granted by the Planning Commission (or City Council on appeal) if compatibility is ensured and if it is found that the use is appropriate in the proposed location. All of the MF/RO equipment, including the pumps, would be housed inside of residential-like buildings designed to complement the existing neighborhood and reduce equipment noise levels. The project would also include the installation of new block walls along its southern and western boundaries to further reduce noise levels and views. As a result, the project would obtain a Conditional Use Permit and would not conflict

with applicable land use plans, policies, or regulations related to avoiding or mitigating an environmental effect. Impacts would be less than significant.

c) **No Impact.** According to the Biological Resources Assessment Report (Appendix B), the project area is within the area covered by the North County Multiple Habitat Conservation Program (MHCP), which is a comprehensive conservation planning process that addresses the needs of multiple plant and animal species in North Western San Diego County. The City of Escondido has prepared a draft subarea plan as required by the MHCP; a public review draft of the subarea plan was released in 2001, but has not yet been adopted. The project site is not located within any of the City's MHCP focused planning areas, in which some lands are proposed to be dedicated for open space and habitat conservation. As a result, the proposed project would not conflict with the MHCP. No impacts would occur.

References

City of Escondido, Escondido General Plan, Downtown Specific Plan and Climate Action Plan EIR, Land Use, 2012. https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1LandUse.pdf .

Environmental Science Associates (ESA), *City of Escondido MFRO Facility for Agriculture Project: Biological Resources Assessment*, prepared by Environmental Science Associates, January 2015.

Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
11. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion

a) **No Impact.** According to United States Geological Survey's (USGS) Mineral Resources Data System, the project site is not identified as a known mineral resource area and does not have a history of mineral extraction uses. In addition, according to the State of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, no oil well exists on the project site. Therefore, the proposed project would not result in the loss of availability of a known mineral resource and no impacts would occur.

b) **No Impact.** The project area is not used for mineral extraction and is not known as a locally important mineral resource recovery site. Further, the project area is not delineated on any plan for mineral resource recovery uses, and no impacts would occur.

References

United States Geological Survey, Mineral Resources Data System, 2015. http://mrdata.usgs.gov/mineral-resources/mrds-us.html.

California Department of Conservation, Division of Oil, Gas & Geothermal Resources Well Finder, 2015. http://maps.conservation.ca.gov/doggr/index.html#close.

Noise

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
12. NOISE — Would the project:				
a) Result in Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Result in Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) Result in A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) Result in A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☒
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

Noise is generally defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed

in units of A-weighted decibels (dBA). A-weighting follows an international standard methodology of frequency deemphasis and is typically applied to community noise measurements.

An individual's noise exposure is a measure of noise over a period of time. While a noise level is a measure of noise at a given instant in time, community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment change the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq}: The L_{eq}, or equivalent sound level, is used to describe noise over a specified period of time in terms of a single numerical value; the L_{eq} of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The L_{eq} may also be referred to as the average sound level.

L_{max}: The maximum, instantaneous noise level experienced during a given period of time.

L_{min}: The minimum, instantaneous noise level experienced during a given period of time.

L_{dn}: Also termed the DNL, the L_{dn} is the average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dBA to measured noise levels between the hours of 10:00 P.M. to 7:00 A.M. to account nighttime noise sensitivity.

CNEL: CNEL, or Community Noise Equivalent Level, is the average A-weighted noise level during a 24-hour day that is obtained after an addition of 5 dBA to measured noise levels between the hours of 7:00 P.M. to 10:00 P.M. and after an addition of 10 dBA to noise levels between the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity in the evening and nighttime, respectively.

An important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted (i.e., comparison to the ambient noise environment). In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships generally occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change in noise levels is considered to be a barely perceivable difference;
- A change in noise levels of 5 dBA is considered to be a readily perceivable difference; and
- A change in noise levels of 10 dBA is subjectively heard as doubling of the perceived loudness.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion, hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise levels from a particular source generally decline as distance to the receptor increases. Other factors, such as the weather and reflecting or barriers, also help intensify or reduce the noise level at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically "hard" locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically "soft" locations (i.e., the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures – generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA.

a) **Less Than Significant Impact With Mitigation**. A significant impact may occur if the proposed project would generate excessive noise that exceeds the noise level standards set forth in the General Plan Community Protection Element and Municipal Code of the City of Escondido. The proposed project, which consists of the development of a MF/RO Facility to provide advanced treatment for Title 22 quality reuse water produced at HARRF, would generate noise levels that could affect nearby noise-sensitive land uses during both construction and operations.

Construction

During this 12-month period, project construction would occur daily from 7:00 a.m. to 4:30 p.m., Monday through Friday. Construction of the proposed project would involve the use of a wide variety of heavy construction equipment onsite, and would generally involve the following construction phases: demolition, site preparation, grading/excavation, drainage/utilities/sub-grade, building construction, architectural coatings, and paving. Construction activities occurring under each of these phases would

require the use of heavy equipment (e.g., excavators, backhoes, loaders, graders, bore/drill rigs, compactors, cranes, etc.) along with the use of smaller power tools, generators, and other sources of noise. During each construction phase there would be a different mix of equipment operating and noise levels would vary based on the amount of equipment in operation and the location of each activity. As such, construction activity noise levels at the site would fluctuate depending on the particular type, number, and duration of use of the various pieces of construction equipment.

With regards to construction-related activities, Section 17-234 of the City's Municipal Code stipulates that the operation of construction equipment at any construction site is only allowed from Monday through Friday between the hours of 7:00 A.M. and 6:00 P.M., and on Saturdays between the hours of 9:00 A.M. and 5:00 P.M. No construction activities are allowed on Sundays and public holidays. In addition, construction equipment or a combination of equipment are not allowed to operate so as to cause noise in excess of a one-hour average sound level limit of 75 dBA at any time, unless a variance has been obtained in advance from the City Manager. With respect to grading activities, Section 17-238 of the City's Municipal Code also limits such activities to Monday through Friday between the hours of 7:00 A.M. and 6:00 P.M. and, provided a variance has been obtained in advance from the City Manager, on Saturdays from 10:00 A.M. to 5:00 P.M. Lastly, Section 17-240(b)(12) of the City's Municipal Code prohibits the operation of any pile driver, pneumatic hammer, derrick, or other similar appliance between the hours of 6:00 P.M. and 7:00 A.M. on weekdays, or on Saturdays, Sundays, or any legal holidays unless a variance has been obtained in advance from the City Manager.

Table 12-1 shows both the maximum (L_{max}) and average (L_{eq}) noise levels produced by various types of construction equipment based on a distance of 50 feet between the equipment and noise receptor. It should be noted that L_{max} noise levels associated with the construction equipment would only be generated when the equipment are operated at full power. Typically, the operating cycle for a piece of construction equipment would involve one or two minutes of full power operation followed by three or four minutes at lower power settings. As such, the L_{max} noise levels shown in Table 12-1 would only occur occasionally throughout the construction day.

TABLE 12-1
CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Construction Equipment	Noise Level at 50 Feet (dBA, Lmax)	Noise Level at 50 Feet (dBA, Leq)
Air Compressor	77.7	73.7
Backhoe	77.6	73.6
Chain Saw	83.7	76.7
Compactor (Ground)	83.2	76.2
Concrete Mixer Truck	78.8	74.8
Concrete Pump Truck	81.4	74.4
Concrete Saw	89.6	82.6
Crane	80.6	72.6
Dozer	81.7	77.7
Dump Truck	76.5	72.5
Excavator	80.7	76.7
Flatbed Truck	74.3	70.3
Front End Loader	79.1	75.1
Generator	80.6	77.6
Grader	85.0	81.0
Jackhammer	88.9	81.9
Paver	77.2	74.2
Pile Driver (Impact)	101.3	97.3
Pile Driver (Vibratory)	100.8	96.8
Pneumatic Tools	85.2	82.2
Pumps	80.9	77.9
Roller	80.0	73.0
Scraper	83.6	79.6
Tractor	84.0	80.0
Vacuum Excavator	85.3	81.3
Vacuum Street Sweeper	81.6	71.6
Welder/Torch	74.0	70.0

SOURCE: FHWA, 2006

The project's construction activities are scheduled to occur between 7 A.M. to 4:30 P.M. Monday through Friday, which would be in compliance with the City's permitted construction hours. Although the project's construction hours would comply with the construction noise regulations in the City's Municipal Code, the nearby land uses surrounding the project still would still be subject to increased noise levels in their existing noise environment. During project construction, the nearest and most notable off-site sensitive receptors that would be exposed to increased noise levels would be the existing single-family residential and church-related uses located around the project site. Specifically, the nearest off-site noise sensitive receptors include the following:

- The single-family residences located west and directly adjacent to the project site;

- The single-family residences located north of the project site, across El Norte Parkway;
- The singe-family residences located east and directly adjacent to the project site; and
- The church-related buildings located south and directly adjacent to the project site.

Due to the proximity of these off-site sensitive uses to the project site, the proposed project's construction activities would expose these sensitive receptors to increased exterior noise levels. Over the course of a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are being operated concurrently.

Construction noise levels associated with the proposed project were estimated for the construction phase that employed the most and noisiest equipment, which for the proposed project would be the building phase, using the Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM). To conduct a conservative analysis, it was assumed that all pieces of construction equipment would be operating concurrently at the center of the project site. Specifically, the project's estimated construction noise levels at the off-site sensitive receptors were based on the concurrent operation of 15 pieces of equipment on a peak construction day during the building phase. The construction equipment mix for all the other construction phases (e.g., site preparation, grading, etc.) would use either less overall equipment or less noisy equipment on a daily basis, and as such would generate lower noise levels. Table 12-2 shows the estimated construction noise levels that would occur at the nearest off-site sensitive uses during a peak construction day at the project site.

TABLE 12-2
ESTIMATED CONSTRUCTION NOISE LEVELS AT OFF-SITE SENSITIVE USES

Off-site Sensitive Land Uses	Location	Approximate Distance to Project site (ft.)[a]	Estimated Hourly Noise Levels (dBA L_{eq})	Applicable Hourly Noise Standard (dBA L_{eq})	Exceed Standard?
Single-family residences	West and adjacent to project site	180	76.3	75	**Yes**
Single-family residences	North of project site, across El Norte Parkway	305	71.7	75	No
Single-family residences	East and adjacent to project site	180	76.3	75	**Yes**
Church-related uses	Southeast and adjacent to project site	230	74.1	75	No

[a] The approximate distances are measured from the center of the project site to the nearest sensitive-receptor property line.
[b] For the purpose of conducting a conservative analysis, it was assumed that 15 pieces of construction equipment used during the project's building construction phase would be operating concurrently and continuously.

As shown in Table 12-2, the City's applicable hourly noise standard of 75 dBA L_{eq} for construction noise would be exceeded at the off-site residential uses located to the west and east of the project site during construction of the Project. The major contributions to construction noise would occur from the use of a few of the loudest pieces of equipment. Minimizing the use of these pieces of equipment in close proximity to the neighboring land uses will enable the construction activities to maintain levels below 75 dBA L_{eq}. Implementation of Mitigation Measures Noise-1 through Noise-6 would restrict the use of these pieces of equipment and reduce overall construction-related noise levels to below 75 dBA L_{eq}.

Excessively loud construction equipment (e.g., jackhammers and concrete saws) that generate high noise levels may be required at the site to break rocks or boulders encountered during the excavation activities. Due to the over-excavation required to compact the underlying soils at the site, the use of a temporary sound barrier would not be effective. Use of these types of loud equipment would be intermittent and not needed for continuous periods. With intermittent use, exceedance of the one-hour standard of 75 dBA is not likely. Finally, Mitigation Measure Noise-5 would specifically require the construction contractor to obtain a variance in advance from the City prior to the prolonged use of such equipment (in excess of one continuous hour) at the project site. As such, with implementation of the mitigation measures, the project's construction noise impacts would be reduced to a less-than-significant level.

Mitigation Measures

Mitigation Measure Noise-1: All construction equipment operating at the project site shall be equipped with properly operating mufflers.

Mitigation Measure Noise-2: Noise and groundborne vibration construction activities whose specific location on the project site may be flexible (e.g., operation of compressors and generators, cement mixing, general truck idling) shall be conducted as far as possible from the nearest noise- and vibration-sensitive land uses.

Mitigation Measure Noise-3: Construction activities associated with the proposed project shall, to the extent feasible, be scheduled so as to avoid operating several pieces of equipment simultaneously, which causes high noise levels. When the use of impact tools are necessary, they shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used and external jackets on the tools themselves shall be used where feasible.

Mitigation Measure Noise-4: All stationary construction noise sources used at the project site shall be located away from adjacent receptors, to the extent feasible, and be muffled and enclosed within temporary sheds or other insulation barriers to the extent feasible.

Mitigation Measure Noise-5: Under conditions where excessively loud equipment (e.g., compressors, jackhammers, and concrete saws) that generate high noise levels are required to be used continuously for an hour or more at the project site within 180 feet of an off-site noise-sensitive receptor, the construction contractor(s) must obtain a variance in advance from the City prior to the use of such equipment.

Mitigation Measure Noise-6: A construction relations officer shall be designated for the proposed project to serve as a liaison with surrounding residents and property owners and be responsible for responding to any concerns regarding construction noise and vibration. The liaison's telephone number(s) shall be prominently displayed at the project site. Signs shall also be posted that include permitted construction days and hours at the project site.

Operations

The City has established exterior sound level limits for different land uses in Section 17-229 of the Municipal Code, which are shown in Table 12-3. These sound level limits are the allowable noise levels at any point on or beyond the boundaries of the property on which the sound is produced. The noise standards apply to each property or portion of property substantially used for a particular type of land use reasonably similar to the land use types shown in Table 12-3. Where two or more dissimilar land uses occur on a single property, the more restrictive noise limits apply. Environmental noise is measured by the L_{eq} for the hours as specified in Table 12-3, and should be measured at the boundary or at any point within the boundary of the receiving or affected property. In addition, the following corrections to the exterior noise level limits shown in Table 12-3 have also been established in Section 17-229(c)(5) of the City's Municipal Code:

1. If the noise is continuous, the L_{eq} for any hour will be represented by any lesser time period within that hour. Noise measurements of a few minutes only will thus suffice to define the noise level.
2. If the noise is intermittent, the L_{eq} for any hour may be represented by a time period typical of the operating cycle. Measurement should be made of a representative number of noisy/quiet periods. A measurement period of not less than 15 minutes is, however, strongly recommended when dealing with intermittent noise.
3. In the event the alleged offensive noise, as judged by the enforcement officer, contains a steady, audible sound such as a whine, screech or hum, or contains a repetitive impulsive noise such as hammering or riveting, the standard limits set forth in Table 12-3 shall be reduced by 10 dBA or to the ambient noise level when such noises are not occurring.
4. If the measured ambient level exceeds that permissible in Table 12-3, the allowable noise exposure standard shall be the ambient noise level. The ambient level shall be measured when the alleged noise violations source is not operating.

5. The sound level limit at a location on a boundary between two land use classifications is the limit applicable to the receiving land use; provided, however, that the one-hour average sound level limit applicable to extractive industries including, but not limited to, borrow pits and mines, shall be 75 dBA at the property line regardless of the zone where the extractive industry is actually located.

TABLE 12-3
CITY OF ESCONDIDO EXTERIOR SOUND LEVEL LIMTS

Zone	Time	Applicable Limit One-hour Average Sound Level (A-weighted Decibels)
Residential zones	7:00 A.M. to 10:00 P.M.	50
	10:00 P.M. to 7:00 A.M.	45
Multi-residential zones	7:00 A.M. to 10:00 P.M.	55
	10:00 P.M. to 7:00 A.M.	50
Commercial zones	7:00 A.M. to 10:00 P.M.	60
	10:00 P.M. to 7:00 A.M.	55
Light industrial/Industrial park zones	Anytime	70
General Industrial zones	Anytime	75

SOURCE: City of Escondido Municipal Code Section 17-229, Sound Level Limits.

During project operations, noise sources at the project site would consist primarily of the numerous on-site electric pumps and fans associated with the MF/RO Facility. However, all of the MF/RO equipment, including the pumps, would be housed inside of buildings. Additionally, as part of the proposed project, all pumping equipment would generally be placed towards the inside of the property behind storage tanks. Furthermore, the on-site facilities would be setback from the property line based on residential property setback criteria, including 15-feet front yard setbacks, 20-feet rear yard setbacks, and 5-feet (one side) and 10-feet (other side) side yard setbacks. Aside from setbacks, the project would also include the installation of new block walls along its southern and western boundaries. In particular, the block wall along the western boundary of the project site would provide an additional noise barrier for the existing single-family residential uses located west and adjacent to the project site. The existing block wall between the project site and the single-family residential properties to the east would remain as part of the project. As such, given the design of the proposed project, it is anticipated that noise levels generated by the on-site pumps and associated equipment would be barely perceptible at the off-site sensitive receptors located adjacent to the project site. Thus, the operational noise levels generated by the proposed project are not anticipated to adversely affect the neighboring noise-sensitive land uses, and this impact is considered to be less than significant. Nonetheless, Mitigation Measure Noise-7, which requires all stationary equipment associated with the proposed project to be properly muffled or shielded to comply with the City's noise standards, would be implemented to further ensure that

potential operational noise impacts associated with the project would remain less than significant.

Mitigation Measures

Mitigation Measure Noise-7: All stationary noise-generating equipment associated with the proposed MF/RO Facility shall be adequately muffled or shielded such that the composite operational noise levels generated by the facility would not exceed the City's established exterior sound level limits for residential zones at the property line of the neighboring residential uses. Under the condition where the existing ambient noise levels at the neighboring residential uses exceed the City's exterior sound level limits for residential zones, the allowable noise exposure standard for project operations at the neighboring residential uses shall be the existing ambient noise level at these properties.

b) **Less Than Significant Impact With Mitigation**. Vibration can be interpreted as energy transmitted in waves through the ground or man-made structures. These energy waves generally dissipate with distance from the vibration source. Because energy is lost during the transfer of energy from one particle to another, vibration becomes less perceptible with increasing distance from the source.

As described in the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment (FTA, 2006), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operation of heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. Peak particle velocity is typically a factor of 1.7 to 6 times greater than RMS vibration velocity (FTA, 2006). The decibel notation acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration sensitive equipment.

The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration levels exceed the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inches per second (in/sec) PPV (FTA, 2006).

With regards to the proposed project, groundborne vibration would be generated from the operation of heavy construction equipment at the project site, which could potentially affect the existing sensitive land uses surrounding the project site. Once completed the proposed project, which consists of a MF/RO Facility, would not include any operational sources of groundborne vibration.

Construction

Groundborne vibration levels resulting from construction activities at the project site were estimated using data published by the Federal Transit Administration (FTA) in its *Transit Noise and Vibration Impact Assessment* (2006) document. In accordance with Noise Policy 5.5 in the City's General Plan Community Protection Element, the potential vibration levels at off-site sensitive locations resulting from implementation of the proposed project are analyzed against the vibration thresholds established by the FTA to determine whether an exceedance of allowable vibration levels would occur. The FTA has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities, which are shown in Table 12-4.

TABLE 12-4
CONSTRUCTION VIBRATION DAMAGE CRITERIA

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

SOURCE: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.

In addition, the FTA has also adopted standards associated with human annoyance for groundborne vibration impacts for the following three land-use categories: Vibration Category 1 – High Sensitivity, Vibration Category 2 – Residential, and Vibration Category 3 – Institutional. The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university

research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference. The vibration thresholds associated with human annoyance for these three land-use categories are shown in Table 12-5. No thresholds have been adopted or recommended for commercial and office uses.

TABLE 12-5
GROUNDBORNE VIBRATION IMPACT CRITERIA FOR GENERAL ASSESSMENT

Land Use Category	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB[d]	65 VdB[d]	65 VdB[d]
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

a "Frequent Events" is defined as more than 70 vibration events of the same source per day.
b "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
c "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day.
d This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes.

SOURCE: FTA, 2006.

Construction activities that would occur within the project site would include grading and excavation, which would have the potential to generate low levels of groundborne vibration. As such, the existing single-family residential uses located to the west and east of the project site along with the church-related buildings located to the southeast of the project site could be exposed to the generation of excessive groundborne vibration or groundborne noise levels related to construction activities. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to structural damage at the highest levels. Site ground vibrations from construction activities very rarely reach the levels that can damage structures, but they may be perceived in buildings very close to a construction site. No pile-driving activities would be required for construction of the proposed project, although other high-impact equipment (e.g., jackhammers) may be used at the site under the scenario where rocks or boulders are encountered during the excavation activities.

The various PPV and RMS velocity (in VdB) levels for the general types of construction equipment that would operate during the construction of the proposed project are identified in Table 12-6. Based on the information presented in Table 12-6, vibration velocities could reach as high as approximately 0.089 inch-per-second PPV at 25 feet from the source

activity, depending on the type of construction equipment in use. This corresponds to a RMS velocity level (in VdB) of 87 VdB at 25 feet from the source activity.

TABLE 12-6
VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

	Approximate PPV (in/sec)					Approximate RMS (VdB)				
Equipment	**25 Feet**	**50 Feet**	**60 Feet**	**75 Feet**	**100 Feet**	**25 Feet**	**50 Feet**	**60 Feet**	**75 Feet**	**100 Feet**
Large Bulldozer	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Caisson Drilling	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Loaded Trucks	0.076	0.027	0.020	0.015	0.010	86	77	75	72	68
Jackhammer	0.035	0.012	0.009	0.007	0.004	79	70	68	65	61
Small Bulldozer	0.003	0.001	0.0008	0.0006	0.0004	58	49	47	44	40

SOURCE: FTA, 2006.

Construction activities associated with the proposed project would have the potential to impact the nearest surrounding off-site sensitive receptors to the project site, which include the single-family residential uses to the west, north, and east, and the church-related buildings located to the southeast. Table 12-7 shows the construction-related groundborne vibration levels that would occur at the identified off-site sensitive uses during construction at the project site.

As shown in Table 12-7, the vibration velocities forecasted to occur at the off-site sensitive receptors could potentially range from 0.009 in/sec PPV at the nearest single-family residence located north of the Project site, across El Norte Parkway, to 0.35 in/sec PPV at the residences located immediately west of the project site. None of the buildings at the identified offsite sensitive use locations are considered to be fragile structures that are extremely susceptible to vibration damage. For the purpose of this analysis, the identified off-site residential and church-related structures surrounding the project site are considered to be "older residential structures," based on the structure descriptions provided under FTA's vibration criteria (refer to Table 12-4). Based on the information shown in Table 12-7, with the exception of the single-family residences located west of the project site, none of the remaining off-site residential or church-related structures would be exposed to PPV groundborne vibration levels that exceed the 0.2 inches per second PPV criteria. However, because the single-family residences located west of the project site would be within 10 feet of the equipment, they could be exposed to PPV groundborne vibration levels that exceed the 0.2 inches per second PPV criteria. This impact dissipates quickly with distance, reducing to 0.124 inches per second PPV at 20 feet, which is below the threshold for potential damage to structures. The majority of the construction activities would occur greater than 20 feet from the neighboring structures. Furthermore, the limited use of large bulldozers within 20 feet of neighboring structures

would ensure that vibration does not occur for extended periods of time where damage to neighboring structures may occur. Mitigation measure Noise-8 would provide monitoring of the construction activities near neighboring structures to ensure that construction methods are modified if necessary. Compliance with the City building codes and Conditional Use Permit would ensure that construction methods are protective of neighboring structures and would ensure a less than significant impact to neighboring structures from construction vibration.

TABLE 12-7
GROUNDBORNE VIBRATION LEVELS AT OFF-SITE SENSITIVE USES

Off-site Sensitive Land Use	Approximate Distance to project site (ft.)[a]	Estimated PPV (in/sec)	Estimated RMS Velocity Level (VdB)
Single-family residences located west and adjacent to project site.	10	0.352	99
Single-family residences located north of project site, across El Norte Parkway.	115	0.009	67
Single-family residences located east and adjacent to project site.	20	0.124	90
Church-related uses located southeast and adjacent to project site.	20	0.124	90

ft. = feet
in/sec = inches per second.

[a] The approximate distances are measured from the nearest project site boundary to the nearest off-site structure.

In terms of human annoyance, the vibration levels forecasted to occur at the offsite sensitive receptors would range from 67 VdB at the single-family residences located north of the project site, across El Norte Parkway, to 99 VdB at the single-family residences located immediately west of the project site. As the vibration level at the residences located to the west and east of the project site would exceed the FTA's 80 VdB threshold for residences or places where people may sleep during construction of the proposed project, potential vibration impacts associated with human annoyance could occur at these off-site receptors.[5] In addition, the vibration level at the church-related buildings to the southeast of the project site would also exceed the FTA's 83 VdB threshold for institutional uses. As such, potential vibration impacts at these nearby off-site sensitive receptors would be potentially significant.

Restricting the use of excavation equipment would not be possible due to the need to over-excavate the site for soil compaction. Therefore, for construction activities within 45 feet of neighboring residential and church-related uses, pre-construction notification would be required to describe the potential for perceptible levels of vibration.With

[5] In terms of groundborne vibration impacts associated with human annoyance, this analysis uses the FTA's vibration impact thresholds for residences and institutional land uses under conditions where there are an infrequent number of events per day.

implementation of Mitigation Measure Noise-8, the vibration impact at the off-site residential uses located to the west and east of the project site and the church-related uses to the southeast of the project site would be less than significant.

Mitigation Measures

Mitigation Measure Noise-8: During excavation activities within 20 feet of the neighboring residences, the City shall conduct visual monitoring of the neighboring structures to evaluate the effects of vibration resulting from construction activities. If perceptible vibration becomes excessive, the monitor shall have the authority to halt activities until construction methods are modified to minimize vibration. Alternative methods could include use of backhoes or small dozers rather than large bulldozers for the outer edge of the excavation.

Mitigation Measure Noise-9: Prior to any construction activities, the existing residential and church-related land uses located directly adjacent to the project site shall be notified of the dates of construction along with a disclosure that perceptible vibration levels could be felt over the duration of those construction activities. These neighboring sensitive land uses shall be kept informed of any changes to the construction schedule.

c) **Less Than Significant Impact**. A significant impact may occur if the proposed project were to result in a substantial permanent increase in ambient noise levels above existing ambient noise levels without the proposed project. The proposed project, which consists of the development of a MFRO facility, would introduce permanent noise sources at the project site from the operation of the numerous on-site electric pumps associated with the new facility. As shown in Table 12-3 the City's Noise Ordinance limits one-hour average sound level at 50 dBA in the day and 45 dBA in the nighttime in residential zones. Additionally, the Community Protection Element of the City's General Plan states that noise impacts of proposed projects on existing land uses should be evaluated in terms of potential for adverse community response, based on a significant increase in existing noise levels. For example, if an area currently is below the maximum normally acceptable level, an increase in noise up to the maximum should not necessarily be allowed. Projects increasing noise levels by 5 dBA or greater should be considered as generating a significant impact and should require mitigation. Furthermore, Noise Policy 5.3 requires noise attenuation for outdoor spaces in all developments where projected incremental exterior noise levels exceed those shown in **Table 12-8**.

As discussed above under Question 12(a), all of the operating equipment for the facility would be housed inside of buildings and all pumping equipment would generally be placed towards the inside of the property behind storage tanks. Additionally, aside from the on-site facilities being set back from the project site's property line based on residential property setback criteria, the project would also include the installation of new block walls along its southern and western boundaries. As such, it is anticipated that noise levels generated by the project's on-site pumps and associated equipment would be barely perceptible at the off-site sensitive receptors located adjacent to the project site.

TABLE 12-8
EXTERIOR INCREMENTAL ENVIRONMENTAL NOISE IMPACT STANDARDS FOR NOISE-SENSITIVE USES (dB)

Residences and Buildings Where People Normally Sleep[a]		Institutional Land Uses with Primarily Daytime and Evening Uses[b]	
Existing L_{dn}	Allowable Noise Increment	Existing Peak Hour L_{eq}	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

NOTE: Noise levels are measured at the property line of the noise-sensitive use.

a This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
b This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material.

SOURCE: City of Escondido General Plan, Community Protection Element, 2012.

Thus, the operational noise levels generated by the proposed project are not anticipated to result in a substantial permanent increase to the existing ambient noise levels at the neighboring noise-sensitive land uses, and this impact is considered to be less than significant. Nonetheless, with implementation of Mitigation Measure Noise-8, which requires all stationary equipment associated with the proposed project to be properly muffled or shielded to comply with the City's noise standards, any potential operational noise impacts associated with the project would remain less than significant.

d) **Less than Significant Impact With Mitigation**. A significant impact may occur if the proposed project were to result in a substantial temporary or periodic increase in ambient noise levels above existing ambient noise levels without the proposed project. As discussed in Question 12(a) above, the proposed project's construction activities would comply with the construction hours permitted by the City's Municipal Code. However, despite compliance with the City's allowable construction hours, the proposed project would still expose the existing sensitive receptors (i.e., single-family residential uses and church-related uses) located directly adjacent to the project site to increased exterior noise levels above their respective existing ambient noise levels. It should be noted, however, that any increase in noise levels at the off-site sensitive receptors during project construction would be temporary in nature, and would not generate continuously high noise levels, although occasional single-event disturbances from excavation and grading activities are possible. During project construction, the noise levels experienced at the

nearest off-site receptors would vary depending on the distance of the project's construction equipment to the receptor. For instance, the construction noise levels experienced at the off-site residential uses to the west would be the greatest when construction equipment are operating in the western portion of the project site, while noise levels at these receptors would be the lowest when construction equipment move to operate in other portions of the project site. In addition, construction equipment engines would also likely be intermittently turned on and off over the course of an hour. Thus, the noise levels would fluctuate over the course of a construction day as equipment moves back and forth across the project site. Nonetheless, because the temporary noise nuisance generated by the project's construction activities would constitute a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project, this noise impact is considered to be potentially significant.

Implementation of Mitigation Measures Noise-1 through Noise-6, which would require the implementation of noise reduction devices and techniques during construction at the project site, would reduce the noise levels associated with construction of the proposed project to the maximum extent that is technically feasible. Therefore, with implementation of Mitigation Measures Noise-1 through Noise-6, the temporary noise impacts associated with project construction would be reduced to a less-than-significant level.

e) **No Impact.** The proposed project is not located within an airport land use plan or within two miles of a public airport or public use airport. The nearest public airport is the Ramona Airport that is located approximately 10.5 miles to the southeast from the project site. No impact would occur.

f) **No Impact.** The proposed project is not located within the vicinity of a private airstrip. The nearest private airport is Lake Wohlford Resort Airstrip located approximately 3 miles northeast of the project area. No airstrip related noise impacts would occur.

References

City of Escondido, City of Escondido General Plan, Community Protection Element, 2012. http://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/GeneralPlanChapterVI.pdf.

City of Escondido. Escondido Municipal Code. http://qcode.us/codes/escondido.

Federal Transit Administration (FTA). *Transit Noise and Vibration Impact Assessment.* May 2006.

Population and Housing

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
13. POPULATION AND HOUSING — Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a) **No impact.** The proposed project does not include housing or commercial development that would directly affect the number of residents or employees in the area and would not contribute to the creation of additional housing or jobs in the City of Escondido. Rather, the proposed project concept would improve the quality of recycled water to local agricultural growers and capture valuable water resources. Therefore, no impacts would occur.

b) **No Impact.** The project area is undeveloped and vacant. The proposed project would not remove existing housing. Therefore, the proposed project would not displace people or housing, and there would be no impact.

c) **No Impact.** The proposed project includes the development of a treatment facility on undeveloped land. The proposed project would not remove housing and would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. Therefore, no impacts would occur.

Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
14. PUBLIC SERVICES — Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of, or the 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?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion

a.i) **Less than Significant Impact.** Escondido Fire Department provides fire protection services in the project area. The proposed project would not change existing demand for fire protection services because operation of the project would not result in a substantial increase in employees or population. Therefore, the project would not substantially increase the need for new fire department staff or new facilities. Therefore, the proposed project would have no impacts associated with fire protection services.

a.ii) **No Impact.** Escondido Police Department provides law enforcement services in the project area. The proposed project includes the construction of a water treatment facility to provide additional recycled water to agricultural growers in the area via existing pipelines. Construction activities would be short-term and limited to a maximum of 50 construction workers including management staff. The proposed project would operate as an unmanned facility and would not provide new residents to the area. Workers would conduct monthly maintenance visits. In addition, the new treatment facility would be enclosed by security walls and fencing. As a result, the proposed project is not anticipated to require additional police protection services, and no impacts would occur.

a.iii) **No Impact.** The proposed project involves the installation of an unmanned water treatment facility and would not introduce inhabitants to the project area that would require additional schools. No impacts would occur.

a.iv) **No Impact.** The proposed project involves the installation of an unmanned water treatment facility and would not introduce inhabitants to the project area that would require construction of new parks. No impacts would occur.

a.v) **No Impact.** The proposed project involves the installation of an unmanned water treatment facility and would not introduce inhabitants to the project area that would require additional public facilities. Therefore, no impacts would occur.

References

Escondido Fire Department, 2015. http://fire.escondido.org/

Escondido Police Department, 2015. http://police.escondido.org/home.aspx

Recreation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
15. RECREATION — Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

a) **No Impact.** The proposed project consists of construction of a MFRO facility. Several recreational facilities are located within the City of Escondido, including Lake Dixon Park, East Valley Community Center, and Washington Park, which are within 1.5 miles of the project site. The project site is adjacent to the planned Northeast El Norte Parkway Ring urban trail. However, the project would not introduce inhabitants or visitors that would use existing recreational facilities or create the need for new facilities. The proposed project would not result in physical deterioration of an existing open space area or any recreation facilities, and no impacts would occur.

b) **No Impact.** The proposed project does not involve or require the construction or expansion of recreational facilities. Therefore, no impacts would occur.

References

City of Escondido, Escondido General Plan, Downtown Specific Plan and Climate Action Plan EIR, Recreation, 2012. http://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Recreation.pdf

Transportation and Traffic

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
16. TRANSPORTATION AND TRAFFIC — Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Discussion

a) **Less than Significant.** Construction of the proposed project would temporarily increase local traffic due to the transport and delivery of construction equipment and materials as well as from daily worker trips. Project site access would be provided from Washington Avenue and El Norte Parkway. It is assumed that the entrance gate would be setback from the property line to provide a truck turn-off parking area from both roadways. Twenty-one maximum daily truck trips are anticipated for export of soil material and delivery of construction materials.

The proposed MFRO Facility's Washington Avenue site access driveway would serve as the proposed onsite facility pipeline corridor. Pipelines entering the project site from Washington Avenue include the HARRF reuse influent pipeline, brine/reject waste return pipeline, agriculture supply pipeline, potable water, storm drain, fiber optic and electrical conduit. All the pipelines are going to connect to existing pipes under Washington Avenue, which were upgraded under a different project. The pipeline corridor would be designed to mitigate excessive pipeline crossings onsite and to provide area for future pipe installations, if required. No trenching off-site would be necessary. Because proposed project construction trips would be minimal and short-term, they are not

anticipated to impact the existing circulation system performances. As a result, traffic impacts to the roadway system from construction would be less than significant.

Traffic related to operation of the unmanned facility would be minimal and limited to inspection, maintenance, and/or repair activities that would occur infrequently. Therefore operation of the proposed project would not result in significant operational traffic increases.

b) **Less than Significant.** Little to no long-term increase in traffic generation would occur as a result of the proposed project. Traffic along El Norte Road and Washington Avenue would be limited to equipment and materials deliveries during construction phases, and minimal traffic in and out of the project site would occur during operation. The proposed project would not include construction along any public roadway right-of-ways, and would not interfere with local traffic. The intermittent operational traffic and the short-term construction traffic resulting from the proposed project would not adversely affect level of service standards and travel demand measures for designated roads or highways. The impacts would be less than significant.

c) **No Impact.** The proposed project is not located within the Airport Influence Area of any nearby airports (City of Escondido, 2012). The nearest airport to the project site is Lake Wohlford Resort Airstrip, a private airstrip approximately 3 miles northeast of the project area. The proposed project does not involve any aviation components or structures at heights that would potentially pose an aviation concern. No project activities would alter the existing air traffic patterns, levels, or locations that result in safety risks. No impact would occur.

d) **No Impact.** The proposed project would install infrastructure necessary for the MFRO process and would not be located within any public roadway right-of-way. The proposed project would not alter existing roadways not include any hazardous design features such as sharp curves or dangerous intersections. No incompatible uses are proposed. As such, no impacts would occur.

e) **Less than Significant.** Access to the project area would be from El Norte Parkway and Washington Avenue. Construction activities would be within the project site, and are not anticipated to interfere with traffic flow or emergency response access to the project area. Onsite operational activities would involve minimal traffic in and out of the project site and would not result in interference with emergency response access. Impacts would be less than significant.

f) **No Impact.** The proposed project would not be located within any public roadway right-of-ways. As such, once implemented, the proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. There is no impact.

References

City of Escondido, General Plan Mobility and Infrastructure Element, 2012. https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/GeneralPlanChapterIII.pdf.

Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
17. UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

a) **Less than Significant.** The proposed project would not conflict with wastewater treatment requirements of the San Diego RWQCB. The proposed project includes the construction of a recycled water treatment facility to provide water for agricultural activities. The MF/RO Facility would provide advanced treatment for Title 22 quality reuse water produced at HARRF. The MF/RO Facility treatment equipment is proposed to operate with a production capacity of 0.5 mgd [350 gallons per minute (gpm)] and an ultimate effluent production capacity of 2.0 mgd (1,390 gpm). Because Title 22 quality reuse water produced at HARRF would be diverted to the proposed project, this would reduce the effluent discharge from the HARRF existing outfall and would extend the life capacity of that facility, thus postponing capacity upgrades. As a result, no adverse impacts to the HARRF would occur nor would the proposed project conflict with wastewater treatment requirements of the San Diego Regional Water Quality Control Board.

The State Water Resources Control Board (State Water Board) adopted General Order WQ 2014-0090-DWQ on June 3, 2014 to streamline permitting for recycled water use. The General Order allows the use of tertiary disinfected, secondary disinfected, and in some cases secondary undisinfected recycled municipal wastewater for title 22 approved

non-potable uses such as agricultural irrigation. Recycled water use for irrigation is limited to agronomic application rates; therefore, the amount of recycled water that could potentially reach groundwater will be limited. To obtain coverage under the Order, the City would be required to submit a Notice of Intent and an application fee to the San Diego Regional Water Quality Control Board. The operation phase of the proposed project would comply with the treatment requirements of the San Diego Regional Water Quality Control Board. No substantial adverse impacts to water quality would occur; therefore, impacts would be less than significant.

b) **No Impact.** Recycled water from HARRF would be transported to the project site through existing water pipeline conveyance structures recently constructed near the project site. The recycled water pipeline was designed to convey recycled water throughout the City, including the proposed project. As such, there is adequate capacity in the pipeline and at HARRF to provide recycled water for the proposed project. Therefore, no impacts related to the construction of water facilities would occur. Brine concentrate created from the filtration process would be transported to the existing HARRF facility through existing conveyance structures throughout the City. The brine conveyance pipeline is an existing 12-inch HDPE pipe. The recent brine line extension was designed to convey brine concentrate from industry throughout the City, including the proposed project. As such, there is adequate capacity in the pipeline and at HARRF to receive the brine from the proposed project.

c) **No Impact.** The proposed project does not involve the construction or expansion of storm water drainage facilities. An existing 48-inch storm drain on Washington Avenue would be utilized. Stormwater runoff would drain through bio retention areas on-site before running off into the existing local facilities. No new facilities would be required; therefore, there would be no impact.

d) **No Impact.** The proposed project involves treating recycled water from HARRF through a MFRO facility for use in agriculture in the San Diego County area. This would offset the existing potable water supplies delivered to agricultural customers. Due to drought conditions in California, generally only higher salinity source water is available. Constructing infrastructure to provide higher quality recycled water (lower salinity) to the growers would offset potable demand, decrease demand for imported water, and continue efficient agricultural production. The water produced at the proposed project would be sent through existing non-potable reuse water/agriculture pipelines and distributed to growers. The proposed project would not require new or expanded entitlements; therefore, no impact would occur.

e) **No Impact.** The proposed project involves treatment of recycled water. Because Title 22 quality reuse water produced at HARRF would be diverted to the proposed project, this would reduce the discharge from the existing outfall and extend the life capacity of that facility, thus postponing capacity upgrades. As a result, the wastewater treatment

provider has adequate capacity to serve the project. No adverse impacts to wastewater treatment capacity would occur.

f) **Less than Significant.** Construction and implementation of the proposed project is not anticipated to generate a significant amount of solid waste. To the extent possible, excavated soil would be reused onsite for fill, compacted to 90% of its maximum dry density. The construction contractor would be required to dispose of excavated soil and solid wastes in accordance with local solid waste disposal requirements. Construction of the proposed project would result in a total excavation of 10,000 cubic yards of soil (480 cubic yards daily). The soil would be taken to Sycamore Landfill in Santee, California, owned and operated by a private company, Allied Waste Industries. Sycamore Landfill has a remaining capacity (as of February 2011) of 42,246,551 cubic yards (CalRecycle 2011). As the solid waste from the proposed project is only anticipated to be approximately 10,000 cubic yards, or 0.02 percent of the remaining capacity, the landfill would have sufficient capacity to accommodate the proposed project's solid waste disposal needs. Impacts would be less than significant.

g) **No Impact.** Construction and operation of the proposed project would result in minimal solid waste that would be hauled offsite to a local landfill in compliance with federal, state, and local statutes related to solid waste. No impacts would occur.

References

City of Escondido, General Plan, Downtown Specific Plan and Climate Action Plan EIR, Utilities and Service Systems, 2012. https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Utilities.pdf.

California Department of Resources Recycling and Recovery (CalRecycle), Facility Database, Sycamore Landfill, 2011. http://www.calrecycle.ca.gov/SWFacilities/Directory/37-AA-0023/Detail/.

Energy

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
18. ENERGY — Would the project:				
a) Result in a substantial increase in overall or per capita energy consumption?	☐	☐	☒	☐
b) Result in wasteful or unnecessary consumption of energy?	☐	☐	☒	☐
c) Require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Conflict with applicable energy efficiency policies or standards?	☐	☐	☐	☒

Discussion

a) **Less than Significant.** The proposed project involves construction of a MFRO facility to provide filtered water to agriculture in the San Diego County area. While the Reverse Osmosis (RO) feed pumps would use energy to boost the pressure of the RO feed water to the RO membranes, the amount of energy used would not be substantial. In addition, given the current drought conditions and need to increase use of recycled water, the overall amount of energy used is less than significant when compared to the amount of energy required to import that same amount of water from areas outside of Southern California. The impacts to energy use would remain less than significant.

b) **Less than Significant.** The proposed project involves construction of a MFRO facility to provide filtered water to agricultural uses in the San Diego County area. Use of energy in the proposed project operation would not be considered wasteful or unnecessary. Agricultural producers are a vital part of Escondido's community and its economy. Avocados are one of the most important crops grown in San Diego County, and water quality for avocado production is important for quantity and quality of production. Growers maintain a high demand for water, specifically low-salinity water. Water must be low in chlorides and other constituents to avoid leaf burn, root rot, and the need for excessive flushing. For these reasons, infrastructure to provide more recycled water with lower salinity to the growers is necessary to offset agricultural potable demand, decrease demand for imported water, and to continue efficient agricultural production. In addition, the proposed project would reduce the discharge from the existing outfall and extend the life capacity of that facility, thus postponing capacity upgrades. Impacts would be less than significant.

c) **Less than Significant.** The proposed project would not require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity. Electrical power for the proposed project would be supplied by the San Diego

Gas & Electric (SDG&E). It is assumed that power would be derived from a new pad mounted transformer of 480V. All electrical equipment would be installed in a process building electrical room. Impacts would be less than significant.

d) **No Impact.** The proposed project would comply with all applicable energy efficiency policies and standards, including the California Green Building Standards Code (City of Escondido, 2015). The project would not conflict with applicable energy efficiency policies or standards, therefore no impacts would occur.

References

City of Escondido, Municipal Code Chapter 6, Article 1. http://www.qcode.us/codes/escondido.

Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
19. MANDATORY FINDINGS OF SIGNIFICANCE — Would the project:				
a) Have the potential to 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, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

a) **Less than Significant with Mitigation.** The proposed project involves construction of a MFRO facility to provide filtered water to agriculture in the San Diego County area. The facility would be built on a parcel in a residential neighborhood, and is not anticipated to substantially reduce the habitat of fish or wildlife species, cause fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. The proposed project would incorporate mitigation measures related to air quality, biological resources, and cultural resources as described in this IS/MND to reduce impacts related to the proposed project. With implementation of said mitigation measures, impacts would be less than significant.

b) **Less than Significant.** A cumulative impact could occur if the 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. Because the project impacts are generally construction related, the cumulative study area is generally confined to the immediate vicinity or within a mile radius.

There are several past, present, and reasonably foreseeable projects identified in the City of Escondido that are listed in Table 19-1 below. The closest project is a pipeline adjacent to the project site. The projects identified in Table 19-1 are characterized as residential, school, industrial, and retail in nature.

TABLE 19-1
CUMULATIVE PROJECTS LIST

Project	Location / Distance from Project Site	Land Use	Quantity
Benton Burn/Dump Site Remediation Project	Between Still Water Glen and Sleepy Hill Lane / 4.30 miles NW	Remediation of a dump site	N/A
Cemetery Area Water Pipeline Replacement Project	Located near the North County Cemetery District / 1.70 miles southeast	Potable water pipeline	12,6000 linear feet of new pipeline
Channel maintenance Activities Project	Various sites throughout Escondido	Flood control	63 maintenance sites
City Square Downtown Residential Project	203 South Orange Street / 3 miles southwest	Residential	102 attached units
Classical Academy High School	207 East Pennsylvania / 2.50 miles southwest	Re-use of existing building at school	700 full-time students
East Valley Commercial Project	1330 East Grand Avenue / 1.50 miles southwest	Retail/Commercial	92,000 square feet
11th Avenue Park Master Plan and Zone Change	1517 West 11th Avenue / 4.40 miles southwest	Open Space - Park	3.2 acres
HARRF Administration Building	1521 S Hale Avenue / 5 miles southwest	Office	19,224 square feet
Jesmond Dane Park Lighting Project	2401 N. Broadway / 2.80 miles northwest	Open Space-Park	2 60-foot tall light poles (1,500-watt)
Lexus Escondido Master Plan Modification	1205 Auto Park Way / 4 mile southwest	Commercial	Permit for events at existing location
Lindley Reservoir Tank Replacement Project	720 Hubbard Avenue / 2.14 miles west	Infrastructure	Two 1.5 million-gallon buried water tanks
Maple Street Pedestrian Corridor Master Plan	Maple Street and Woodwork Avenue / 2.80 miles southwest	Master Plan – Public Use	Reconstruction of the portion of Maple Street between W. Grand Avenue and W. Valley Parkway.
Moticello Assisted Living	2323 Felicita Road / 4.6 miles southwest	Residential	119-125 beds/clients
Palomar Pomerado Health Center Project	Citracado Parkway / 6.60 miles southwest	Specific Plan	1,236,000 square feet
Talk of the Town Project	400 Brotherton Road / 4 miles south	Commercial	5,500 square feet
Recycled Water Easterly Main Project	Adjacent to project site	Infrastructure	7.4 miles of recycled water pipeline; brine disposal pipeline and fiber optic cables; recycled water pump station; and recycled water storage tank
Westfield North County LED Freeway-Oriented Sign Project	272 East Via Rancho Parkway / 5.30 miles south	Commercial	87.5-foot tall freeway-oriented sign

SOURCE: City of Escondido, 2015.

Implementation of the proposed project would not impact any scenic vistas, state scenic highways, or generate any light and glare. Impacts related to visual character would be less than cumulatively considerable due to project design features including architectural and landscaping designs. The project does not include any agricultural or mineral resources that could be impacted, and the project would have no effect on land use, population, housing, public services, and utilities. As a result, cumulative impacts related to these resources would not occur.

In addition, air quality, greenhouse gas, noise, hazardous material, water quality and traffic impacts that are generated by construction activities would be short-term and limited by minimal construction workers traveling to the site, and a short construction period. The minimal emissions, noise, traffic and water pollutants generated by the project would also be less than cumulatively considerable due to the location of the project and limited construction activities and duration occurring at the same time. The chemicals used onsite during project operation would comply with existing federal, state and local regulations pertaining to hazardous materials use, treatment, storage and disposal. Furthermore, impacts related to biological resources and cultural resources would be less than cumulatively considerable with implementation of Mitigation Measures. Therefore, the proposed project would not result in any impacts that would be individually limited, but cumulatively considerable resulting from the planned facility development.

c) **Less than Significant with Mitigation.** Based on the analysis, the proposed project would have potentially significant environmental effects on biological resources, cultural resources, and noise that could cause substantial adverse effects on human beings, either directly or indirectly. However, implementation of mitigation measures, as provided within each of these resource topic sections of this environmental checklist, would reduce project-related potentially significant impacts to a less than significant level. Therefore after implementation of mitigation measures, the proposed project would result in a less than significant environmental impact to human beings.

APPENDIX A
Air Quality Data

Escondido MFRO
Assumptions

CalEEMod Inputs that are not modeling defaults:

Project Location:	County
	San Diego
Climate Zone:	13
Operational Year:	2017
Utility Company:	San Diego Gas & Electric

Land Use Type:

Total:			Modeled as
MFRO Facility	10	KSF	General Heavy Industrial
Acerage	3.25		
Employment	2 to 3	Total	per month

CONSTRUCTION INFORMATION

The construction information was provided by the Client. However, the amount of equipment specified onsite during phases that overlap is very high for a 3.25 acre site. There is no possible way that 13 pieces of heavy equipment along with numerous pieces of minor equipment could safely operate onsite at the same time. The modeling therefore will show each individual phase together, but assumes that all the equpiment from each phase would not be operating onsite when the phase overlaps with other equipment. For example, the site preparation phase has 1 air compressor and 1 backhoe, the grading phase has one air compressor and 2 backhoes. Therefore, when these phases overlap, the maximum amount of equipment that is anticpated to operate onsite is 1 air compressor and 2 backhoes. Additionally, while a separate soil hauling phase was not included in the provided information, soil hauling during grading would only occur over 22 of the 75 days. Therefore in order to ensure the emissions for the modeling took into account the reduced hauling time, as separate soil hauling phase was modeled. In this case, emissions from the soil hauling phase will be added to the grading phase. Additionally, in order for CalEEMod to allow for the proper inputs, the grader and loader anticipated for use during the grading phase was moved to the soil hauling phase and removed from the grading equipment. In this respect, adding the emissions from the 2 phases will result in maximum daily emissions to be anticipated in the grading phase. It is likely however for the building construction, architectural coating and paving phase to overlap, however the likelihood of all the building and construction equipment being in operation at the same time as the paving and architectural coating phases is low.

The phasing in CalEEMod reports the days of construction not necessarily the specific start/end date of the phase as listed below. It is assumed that construction would occur only over the number of days anticipated however those days are not necessarily consecutive.

Escondido MFRO
Assumptions

Construction schedule based on Project specific Information

Phase	# Worker	Starte Date	End Date	# Days	Days/week
Construction Phase One - June 2016 thru March 2018					
Site Preparation	4	1/1/2016	2/1/2016	22	5
Grading/Excavation	4	1/1/2016	8/1/2016	75	5
Soil Export	N/A	9/1/2016	10/1/2016	22	5
Drainage/Utilities/Subgrade	4	2/1/2016	11/1/2016	75	5
Building Construction	30	2/1/2016	11/1/2016	220	5
Architectural Coating	5	9/1/2016	12/1/2016	60	5
Paving	7	11/1/2016	12/1/2016	22	5

Project Specific Construction information provided.

Site Preparation

Soil Export	5,000	Cubic Yards Total
	20	cubic yard truck capacity
	250	total round trip truck trips
	20	distance to disposal site (approximate)

Equipment	#	Hrs	Acres disturbed[1]	
air compressors	1	8	0	
Backhoes	1	8	0	
concrete/industrial saws	1	4	0	
compactor	1	8	0	
generator set	1	8	0	
grader	1	8	0.5	
Loaders	1	8	0	
Skid Steer Loaders	1	4	0	
Sweepers/scrubbers	1	4	0	0.5 Total

Soil Hauling (Modeled as a separate grading phase)

Soil Export	5,000	Cubic Yards Total
	20	cubic yard truck capacity
	250	total round trip truck trips
	20	distance to disposal site (approximate)

Equipment	#	Hrs	Acres disturbed[1]	
Graders	1	8	0.5	
Loaders	1	8	0	0.5 Total

* This sill occur from 9/1/2016 to 10/1/2016 and will overlap completely with grading phase. The grader and loader in this phase are needed to ensure the ability to have a materials movement entry for this phase. Therefore, they are accounted for here and not in the grading phase.

Escondido MFRO
Assumptions

Grading/Excavation

Soil Export accounted for in the Soil Hauling phase

Equipment	#	Hrs	Acres disturbed[1]	
air compressors	1	8	0	
Backhoes	2	8	0	
concrete/industrial saws	1	4	0	
compactor	1	8	0	
Excavator	1	8	0.5	
Forklifts	1	8	0	
Generator Sets	1	8	0	
Skid Steer Loaders	1	4	0	
Sweepers/scrubbers	1	4	0	0.5 Total

Drainage/Utilities/Subgrade

Equipment	#	Hrs	Acres disturbed[1]	
air compressors	1	8	0	
Backhoes	2	8	0	
Bore/Drill Rigs	1	8	0	
Compactor	1	8	0	
Crane	1	8	0	
Excavator	1	8	1	
Forklift	1	8	0	
Generator set	1	8	0	
loaders	1	8	0	
Pumps	1	4	0	
Skid Steer Loaders	1	8	0	
Sweeper/scrubber	1	4	0	
trencher	1	8	0	
Welders	1	8	0	1 Total

Building Construction

Equipment	#	Hrs	Acres disturbed[1]	
air compressors	3	8	0	
Backhoes	1	8	0	
cement mortar mixers	1	8	0	
concrete industrial saws	1	8	0	
cranes	2	8	0	
Forklift	1	8	0	
Generator set	1	8	0	
loaders	1	8	0	
Pumps	1	4	0	
Skid Steer Loaders	1	8	0	
Sweeper/scrubber	1	4	0	
Welders	1	8	0	0 Total

Escondido MFRO
Assumptions

Paving

Acres to be paved 1.25

Equipment	#	Hrs	Acres disturbed[1]	
Compactor	1	8	0	
Forklifts	1	8	0	
Graders	1	8	0.5	
loaders	1	8	0	
Pavers	1	8	0	
Paving Equipment	1	8	0	
Pumps	1	8	0	
Rollers	2	4	0	
Skid Steer Loaders	1	8	0	
Surfacing Equipment	1	8	0	
Sweepers/Scrubbers	1	4	0	0.5 Total

Architectural Coating

Equipment	#	Hrs	Acres disturbed[1]	
Air Compressor	Default	Default	0	Total

[1] - Based on SCAQMD Fact Sheet for applying CalEEMod to Localized Significance Thresholds

Escondido MFRO
Assumptions

PROJECT OPERATIONAL INFORMATION

Operational Mobile Sources

Trip Rates: Delivery and removal of chemicals would be one a month, but we could state once a week. Routine operations and maintenance employee would not be every day either likely 2-3 per month so we could also state per week. Worst case scenario would be like 4 truck trips. As a conservative estimate of truck trips we are estimating high at 10 round trips per day.

20	trips perday
0.002	trips per square foot
0.000002	trips per KSF

Energy: There is no project specific information with respect to electricity and natural gas. However as the process is electricity intensive and all of the pumps would be electric, the defaults for a "Refrigerated Warehouse" are used instead of the defaults for Heavy Industrial. This results in a conservative estimate of electrical usage by using a land use that has a known high electrical consumption rate. However, the default electrical consumption rate for lighting will be reduced to 10 percent because the design calls for natural lighting (translucent roofing panels) as well as the limited amount of time (up to 2 times per month maximum) that maintenance personell would be onsite.

Rate Change	Title 24	Non-Title 24	Lighting	
From Heavy Industrial	1.48	4.27	3.25	Kwh/KSF/year
To Refrigerated Warehouse	2.53	27.88	4.1	Kwh/KSF/year
Revised Refrigerated Warehouse			0.41	Kwh/KSF/year

With respect to natural gas, the "Refrigerated Warehouse" defaults are also used. As the building is not occupied except for a few hours per month, the consumption of natural gas would be minimal. Therefore, as the refrigerated warehouse defaults also have a been used for natural gas consumption.

Rate Change	Title 24	Non-Title 24	
From Heavy Industrial	4.54	7.25	MMBTU/KSF/year
To Refrigerated Warehouse	6.68	0.02	MMBTU/KSF/year

Water: Heavy Industrial defaults used

Solid Waste: Heavy Industrial defaults used

"Mitigation" Measures applied to make project consistent with existing regulation requirements and achievements.

Construction: To achieve SCAQMD standard dust control minimum requiremnts:
- Soil Stabilizers (61% reduction)
- Replace ground cover (5% reduction)
- Water exposed area (3x per day)
- Unpaved roads (15 mph)

Energy: 15% exceedence of Title 24 to account for the Title 24 efficiencey increase between 2008 (CalEEMod default usage) and 2013 regulations currently in effect.

Water: 20% reduction in indoor water use to account for 2013 Title 24 requirements.

Solid Waste: 50% reduction in waste disposal. Current rate achieved by California.

Escondido MFRO

Regional Construction Emissions

Unmitigated Construction Emissions

	Phase Overlap	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
				lbs/day			
Site Preparation	A	7.74	78.10	58.21	0.07	23.29	13.97
Grading/Excavation	A,B	8.90	88.76	63.52	0.09	18.65	11.46
Drainage/Utilities/Subgrade	B	8.04	74.86	49.75	0.07	11.31	7.62
Building Construction	B,C	6.15	49.49	32.93	0.05	3.37	3.21
Architectural Coating	C	4.23	2.38	1.93	0.00	0.20	0.20
Paving	C	4.10	39.51	25.59	0.04	2.60	2.26
Phase Overlap A		16.64	166.86	121.73	0.16	41.94	25.42
Phase Overlap B		23.09	213.11	146.20	0.21	33.33	22.28
Phase Overlap C		14.48	91.38	60.45	0.10	6.17	5.67
County Thresholds		**75**	**250**	**550**	**250**	**100**	**55**
Significant		**No**	**No**	**No**	**No**	**No**	**No**
				Tons/year			
2016		1.47	11.92	8.11	0.01	1.55	1.12
County Thresholds		13.7	40	100	40	15	10
Significant		No	No	No	No	No	No

Source: ESA CalEEMod modeling 2015

Mitigation: None Required

Escondido MFRO

Regional Operational Emissions

Unmitigated Operational Emissions

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
			lbs/day			
Area	0.278	0.000	0.001	0.000	0.000	0.000
Energy	0.002	0.015	0.013	0.000	0.001	0.001
Mobile	0.077	0.175	0.792	0.002	0.126	0.035
Project Total	0.356	0.190	0.806	0.002	0.127	0.036
County Thresholds	55	250	550	250	100	55
Significant	**No**	**No**	No	No	No	No
			Tons/year			
Area	0.051	0.000	0.000	0.000	0.000	0.000
Energy	0.000	0.003	0.002	0.000	0.000	0.000
Mobile	0.013	0.032	0.140	0.000	0.022	0.006
Project Total	0.064	0.034	0.143	0.000	0.023	0.006
County Thresholds	13.7	40	100	40	15	10
Significant	No	No	No	No	No	No

Source: ESA CalEEMod modeling 2015

Mitigation: None Required

Escondido MFRO

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	10.00	1000sqft	3.30	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2017
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The Heavy Industrial is the closest land use type to the MFRO.

Construction Phase - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment -

Off-road Equipment - Based on project specific information

Grading - Based on project specific information and assumptions

Trips and VMT - Based on project specific information and 20 cubic yard trucks

Vehicle Trips - based on 20 trips max per day

Energy Use - Used refrigerated warehouse defaults as more appropriate for the project. Lighting modified to 1/10 of Refrigerated warhouse due to limited occupation.

Water And Wastewater - Defaults used

Solid Waste - Defaults used

Construction Off-road Equipment Mitigation -

Energy Mitigation - Upgrades model to account for 2013 Title 24 requirements

Water Mitigation - Updates model to account for Title 24 requirements

Waste Mitigation - Updates model to account for the reduction level achieved by the state to date

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	60.00
tblConstructionPhase	NumDays	230.00	220.00
tblConstructionPhase	NumDays	8.00	75.00
tblConstructionPhase	NumDays	18.00	22.00
tblConstructionPhase	NumDays	5.00	22.00
tblConstructionPhase	NumDays	8.00	22.00

tblConstructionPhase	NumDays	8.00	75.00
tblConstructionPhase	PhaseEndDate	8/23/2016	11/23/2016
tblConstructionPhase	PhaseEndDate	3/17/2017	12/2/2016
tblConstructionPhase	PhaseEndDate	5/16/2016	4/14/2016
tblConstructionPhase	PhaseEndDate	12/23/2016	11/30/2016
tblConstructionPhase	PhaseEndDate	1/3/2017	5/31/2016
tblConstructionPhase	PhaseEndDate	7/28/2016	5/13/2016
tblConstructionPhase	PhaseStartDate	6/1/2016	9/1/2016
tblConstructionPhase	PhaseStartDate	5/14/2016	2/1/2016
tblConstructionPhase	PhaseStartDate	2/2/2016	1/1/2016
tblConstructionPhase	PhaseStartDate	11/24/2016	11/1/2016
tblConstructionPhase	PhaseStartDate	12/3/2016	5/1/2016
tblConstructionPhase	PhaseStartDate	4/15/2016	2/1/2016
tblEnergyUse	LightingElect	3.25	0.41
tblEnergyUse	NT24E	4.27	27.88
tblEnergyUse	NT24NG	7.25	0.02
tblEnergyUse	T24E	1.48	2.53
tblEnergyUse	T24NG	4.54	6.68
tblGrading	MaterialExported	0.00	5,000.00
tblGrading	MaterialExported	0.00	5,000.00
tblLandUse	LotAcreage	0.23	3.30
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.37	0.37

tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.30	0.30
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors

tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	HaulingTripNumber	625.00	500.00
tblTripsAndVMT	HaulingTripNumber	625.00	500.00
tblTripsAndVMT	WorkerTripNumber	30.00	23.00
tblTripsAndVMT	WorkerTripNumber	30.00	25.00
tblTripsAndVMT	WorkerTripNumber	35.00	30.00
tblTripsAndVMT	WorkerTripNumber	43.00	38.00
tblTripsAndVMT	WorkerTripNumber	10.00	5.00
tblVehicleTrips	ST_TR	1.50	2.00
tblVehicleTrips	SU_TR	1.50	2.00
tblVehicleTrips	WD_TR	1.50	2.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	27.3367	252.6840	177.0228	0.2470	32.8817	14.9318	47.8135	17.0361	14.0818	31.1178	0.0000	24,621.1836	24,621.1836	5.3646	0.0000	24,733.8410
Total	**27.3367**	**252.6840**	**177.0228**	**0.2470**	**32.8817**	**14.9318**	**47.8135**	**17.0361**	**14.0818**	**31.1178**	**0.0000**	**24,621.1836**	**24,621.1836**	**5.3646**	**0.0000**	**24,733.8410**

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					
2016	27.3367	252.6840	177.0228	0.2470	32.8817	14.9318	47.8135	17.0361	14.0818	31.1178	0.0000	24,621.1836	24,621.1836	5.3646	0.0000	24,733.8410
Total	**27.3367**	**252.6840**	**177.0228**	**0.2470**	**32.8817**	**14.9318**	**47.8135**	**17.0361**	**14.0818**	**31.1178**	**0.0000**	**24,621.1836**	**24,621.1836**	**5.3646**	**0.0000**	**24,733.8410**

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

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	0.2776	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3200e-003
Energy	1.9800e-003	0.0180	0.0151	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		21.5955	21.5955	4.1000e-004	4.0000e-004	21.7269
Mobile	0.0765	0.1749	0.7918	1.7400e-003	0.1236	2.2300e-003	0.1258	0.0330	2.0500e-003	0.0350		147.0365	147.0365	6.1700e-003		147.1661
Total	**0.3560**	**0.1929**	**0.8079**	**1.8500e-003**	**0.1236**	**3.6000e-003**	**0.1272**	**0.0330**	**3.4200e-003**	**0.0364**		**168.6342**	**168.6342**	**6.5900e-003**	**4.0000e-004**	**168.8953**

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	0.2776	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3200e-003
Energy	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3658	18.3658	3.5000e-004	3.4000e-004	18.4776
Mobile	0.0765	0.1749	0.7918	1.7400e-003	0.1236	2.2300e-003	0.1258	0.0330	2.0500e-003	0.0350		147.0365	147.0365	6.1700e-003		147.1661
Total	**0.3557**	**0.1902**	**0.8057**	**1.8300e-003**	**0.1236**	**3.3900e-003**	**0.1269**	**0.0330**	**3.2100e-003**	**0.0362**		**165.4046**	**165.4046**	**6.5300e-003**	**3.4000e-004**	**165.6460**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.08	1.40	0.28	1.08	0.00	5.83	0.17	0.00	6.14	0.58	0.00	1.92	1.92	0.91	15.00	1.92

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2016	2/1/2016	5	22	
2	Grading	Grading	1/1/2016	4/14/2016	5	75	
3	Drainage/Utilities/Subgrade	Grading	2/1/2016	5/13/2016	5	75	
4	Building Construction	Building Construction	2/1/2016	12/2/2016	5	220	
5	Soil Hauling	Grading	5/1/2016	5/31/2016	5	22	
6	Architectural Coating	Architectural Coating	9/1/2016	11/23/2016	5	60	
7	Paving	Paving	11/1/2016	11/30/2016	5	22	

Acres of Grading (Site Preparation Phase): 11

Acres of Grading (Grading Phase): 37.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 15,000; Non-Residential Outdoor: 5,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Skid Steer Loaders	1	8.00	64	0.37
Paving	Sweepers/Scrubbers	1	4.00	64	0.46
Paving	Surfacing Equipment	1	8.00	253	0.30
Paving	Cement and Mortar Mixers	2	6.00	9	0.56

Soil Hauling	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Drainage/Utilities/Subgrade	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Drainage/Utilities/Subgrade	Rubber Tired Dozers	1	8.00	255	0.40
Soil Hauling	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Architectural Coating	Air Compressors	1	6.00	78	0.48
Drainage/Utilities/Subgrade	Excavators	1	8.00	162	0.38
Paving	Plate Compactors	1	8.00	8	0.43
Building Construction	Cranes	2	7.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Grading	Excavators	1	8.00	162	0.38
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	4.00	80	0.38
Building Construction	Air Compressors	3	8.00	78	0.48
Drainage/Utilities/Subgrade	Air Compressors	1	8.00	78	0.48
Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Drainage/Utilities/Subgrade	Bore/Drill Rigs	1	8.00	205	0.50
Paving	Paving Equipment	1	6.00	130	0.36
Grading	Air Compressors	1	8.00	78	0.48
Building Construction	Welders	1	8.00	46	0.45
Soil Hauling	Graders	1	8.00	174	0.41
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56

Paving	Forklifts	1	8.00	89	0.20
Drainage/Utilities/Subgrade	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Soil Hauling	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Air Compressors	1	8.00	78	0.48
Site Preparation	Concrete/Industrial Saws	1	4.00	81	0.73
Site Preparation	Plate Compactors	1	8.00	8	0.43
Site Preparation	Generator Sets	1	8.00	84	0.74
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Skid Steer Loaders	1	4.00	64	0.37
Site Preparation	Sweepers/Scrubbers	1	4.00	64	0.46
Grading	Concrete/Industrial Saws	1	4.00	81	0.73
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Forklifts	1	8.00	89	0.20
Grading	Generator Sets	1	8.00	84	0.74
Grading	Skid Steer Loaders	1	4.00	64	0.37
Grading	Sweepers/Scrubbers	1	4.00	64	0.46
Drainage/Utilities/Subgrade	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Subgrade	Cranes	1	8.00	226	0.29
Drainage/Utilities/Subgrade	Forklifts	1	8.00	89	0.20
Drainage/Utilities/Subgrade	Generator Sets	1	8.00	84	0.74
Drainage/Utilities/Subgrade	Pumps	1	4.00	84	0.74
Drainage/Utilities/Subgrade	Skid Steer Loaders	1	8.00	64	0.37
Drainage/Utilities/Subgrade	Sweepers/Scrubbers	1	4.00	64	0.46
Drainage/Utilities/Subgrade	Trenchers	1	8.00	80	0.50
Drainage/Utilities/Subgrade	Welders	1	8.00	46	0.45
Building Construction	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Pumps	1	4.00	84	0.74
Building Construction	Skid Steer Loaders	1	8.00	64	0.37

Building Construction	Sweepers/Scrubbers	1	4.00	64	0.46
Paving	Graders	1	8.00	174	0.41
Paving	Pumps	1	8.00	84	0.74

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
Drainage/Utilities/Subgrade	17	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	12	23.00	0.00	500.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	12	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	4.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	14	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Soil Hauling	4	5.00	0.00	500.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Site Preparation - 2016

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					18.6284	0.0000	18.6284	9.9928	0.0000	9.9928			0.0000			0.0000
Off-Road	7.1633	71.4238	51.3408	0.0555		3.9908	3.9908		3.7343	3.7343		5,630.1222	5,630.1222	1.4309		5,660.1700
Total	**7.1633**	**71.4238**	**51.3408**	**0.0555**	**18.6284**	**3.9908**	**22.6193**	**9.9928**	**3.7343**	**13.7271**		**5,630.1222**	**5,630.1222**	**1.4309**		**5,660.1700**

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	0.4958	6.5744	5.8735	0.0170	0.3960	0.0873	0.4833	0.1084	0.0803	0.1887		1,708.8858	1,708.8858	0.0124		1,709.1451
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	0.0852	0.1059	0.9996	2.2500e-003	0.1889	1.4200e-003	0.1904	0.0501	1.3000e-003	0.0514		187.6044	187.6044	0.0100		187.8146
Total	**0.5810**	**6.6803**	**6.8731**	**0.0192**	**0.5850**	**0.0887**	**0.6736**	**0.1586**	**0.0816**	**0.2401**		**1,896.4902**	**1,896.4902**	**0.0224**		**1,896.9597**

3.2 Site Preparation - 2016

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					18.6284	0.0000	18.6284	9.9928	0.0000	9.9928			0.0000			0.0000
Off-Road	7.1633	71.4238	51.3408	0.0555		3.9908	3.9908		3.7343	3.7343	0.0000	5,630.1222	5,630.1222	1.4309		5,660.1700
Total	**7.1633**	**71.4238**	**51.3408**	**0.0555**	**18.6284**	**3.9908**	**22.6193**	**9.9928**	**3.7343**	**13.7271**	**0.0000**	**5,630.1222**	**5,630.1222**	**1.4309**		**5,660.1700**

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	0.4958	6.5744	5.8735	0.0170	0.3960	0.0873	0.4833	0.1084	0.0803	0.1887		1,708.8858	1,708.8858	0.0124		1,709.1451
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	0.0852	0.1059	0.9996	2.2500e-003	0.1889	1.4200e-003	0.1904	0.0501	1.3000e-003	0.0514		187.6044	187.6044	0.0100		187.8146
Total	**0.5810**	**6.6803**	**6.8731**	**0.0192**	**0.5850**	**0.0887**	**0.6736**	**0.1586**	**0.0816**	**0.2401**		**1,896.4902**	**1,896.4902**	**0.0224**		**1,896.9597**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	5.3063	50.1093	35.0843	0.0446		3.0841	3.0841		2.9001	2.9001		4,494.7508	4,494.7508	1.0884		4,517.6068
Total	**5.3063**	**50.1093**	**35.0843**	**0.0446**	**6.5523**	**3.0841**	**9.6364**	**3.3675**	**2.9001**	**6.2676**		**4,494.7508**	**4,494.7508**	**1.0884**		**4,517.6068**

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	0.0926	0.1151	1.0866	2.4400e-003	0.2054	1.5400e-003	0.2069	0.0545	1.4200e-003	0.0559		203.9179	203.9179	0.0109		204.1463
Total	**0.0926**	**0.1151**	**1.0866**	**2.4400e-003**	**0.2054**	**1.5400e-003**	**0.2069**	**0.0545**	**1.4200e-003**	**0.0559**		**203.9179**	**203.9179**	**0.0109**		**204.1463**

3.3 Grading - 2016

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	5.3063	50.1093	35.0843	0.0446		3.0841	3.0841		2.9001	2.9001	0.0000	4,494.7508	4,494.7508	1.0884		4,517.6068
Total	**5.3063**	**50.1093**	**35.0843**	**0.0446**	**6.5523**	**3.0841**	**9.6364**	**3.3675**	**2.9001**	**6.2676**	**0.0000**	**4,494.7508**	**4,494.7508**	**1.0884**		**4,517.6068**

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	0.0926	0.1151	1.0866	2.4400e-003	0.2054	1.5400e-003	0.2069	0.0545	1.4200e-003	0.0559		203.9179	203.9179	0.0109		204.1463
Total	**0.0926**	**0.1151**	**1.0866**	**2.4400e-003**	**0.2054**	**1.5400e-003**	**0.2069**	**0.0545**	**1.4200e-003**	**0.0559**		**203.9179**	**203.9179**	**0.0109**		**204.1463**

3.4 Drainage/Utilities/Subgrade - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	7.9008	74.6871	48.0536	0.0693		4.4454	4.4454		4.1643	4.1643		7,002.5868	7,002.5868	1.8295		7,041.0067
Total	**7.9008**	**74.6871**	**48.0536**	**0.0693**	**6.5523**	**4.4454**	**10.9978**	**3.3675**	**4.1643**	**7.5318**		**7,002.5868**	**7,002.5868**	**1.8295**		**7,041.0067**

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	0.1408	0.1749	1.6516	3.7100e-003	0.3122	2.3400e-003	0.3145	0.0828	2.1500e-003	0.0850		309.9551	309.9551	0.0165		310.3024
Total	**0.1408**	**0.1749**	**1.6516**	**3.7100e-003**	**0.3122**	**2.3400e-003**	**0.3145**	**0.0828**	**2.1500e-003**	**0.0850**		**309.9551**	**309.9551**	**0.0165**		**310.3024**

3.4 Drainage/Utilities/Subgrade - 2016

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	7.9008	74.6871	48.0536	0.0693		4.4454	4.4454		4.1643	4.1643	0.0000	7,002.5868	7,002.5868	1.8295		7,041.0067
Total	**7.9008**	**74.6871**	**48.0536**	**0.0693**	**6.5523**	**4.4454**	**10.9978**	**3.3675**	**4.1643**	**7.5318**	**0.0000**	**7,002.5868**	**7,002.5868**	**1.8295**		**7,041.0067**

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	0.1408	0.1749	1.6516	3.7100e-003	0.3122	2.3400e-003	0.3145	0.0828	2.1500e-003	0.0850		309.9551	309.9551	0.0165		310.3024
Total	**0.1408**	**0.1749**	**1.6516**	**3.7100e-003**	**0.3122**	**2.3400e-003**	**0.3145**	**0.0828**	**2.1500e-003**	**0.0850**		**309.9551**	**309.9551**	**0.0165**		**310.3024**

3.5 Building Construction - 2016

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	6.1129	49.2811	32.4596	0.0514		3.3157	3.3157		3.1951	3.1951		5,003.3819	5,003.3819	0.9640		5,023.6260
Total	**6.1129**	**49.2811**	**32.4596**	**0.0514**		**3.3157**	**3.3157**		**3.1951**	**3.1951**		**5,003.3819**	**5,003.3819**	**0.9640**		**5,023.6260**

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	0.0241	0.1941	0.2994	4.7000e-004	0.0133	2.9000e-003	0.0162	3.7900e-003	2.6600e-003	6.4500e-003		47.3518	47.3518	3.8000e-004		47.3598
Worker	0.0148	0.0184	0.1739	3.9000e-004	0.0329	2.5000e-004	0.0331	8.7200e-003	2.3000e-004	8.9400e-003		32.6269	32.6269	1.7400e-003		32.6634
Total	**0.0390**	**0.2126**	**0.4733**	**8.6000e-004**	**0.0461**	**3.1500e-003**	**0.0493**	**0.0125**	**2.8900e-003**	**0.0154**		**79.9787**	**79.9787**	**2.1200e-003**		**80.0232**

3.5 Building Construction - 2016

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	6.1129	49.2811	32.4596	0.0514		3.3157	3.3157		3.1951	3.1951	0.0000	5,003.3819	5,003.3819	0.9640		5,023.6260
Total	**6.1129**	**49.2811**	**32.4596**	**0.0514**		**3.3157**	**3.3157**		**3.1951**	**3.1951**	**0.0000**	**5,003.3819**	**5,003.3819**	**0.9640**		**5,023.6260**

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	0.0241	0.1941	0.2994	4.7000e-004	0.0133	2.9000e-003	0.0162	3.7900e-003	2.6600e-003	6.4500e-003		47.3518	47.3518	3.8000e-004		47.3598
Worker	0.0148	0.0184	0.1739	3.9000e-004	0.0329	2.5000e-004	0.0331	8.7200e-003	2.3000e-004	8.9400e-003		32.6269	32.6269	1.7400e-003		32.6634
Total	**0.0390**	**0.2126**	**0.4733**	**8.6000e-004**	**0.0461**	**3.1500e-003**	**0.0493**	**0.0125**	**2.8900e-003**	**0.0154**		**79.9787**	**79.9787**	**2.1200e-003**		**80.0232**

3.6 Soil Hauling - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5843	0.0000	6.5843	3.3723	0.0000	3.3723			0.0000			0.0000
Off-Road	2.9858	31.9365	21.2535	0.0235		1.6972	1.6972		1.5614	1.5614		2,446.4343	2,446.4343	0.7379		2,461.9309
Total	**2.9858**	**31.9365**	**21.2535**	**0.0235**	**6.5843**	**1.6972**	**8.2814**	**3.3723**	**1.5614**	**4.9337**		**2,446.4343**	**2,446.4343**	**0.7379**		**2,461.9309**

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	0.4958	6.5744	5.8735	0.0170	0.3960	0.0873	0.4833	0.1084	0.0803	0.1887		1,708.8858	1,708.8858	0.0124		1,709.1451
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	0.0185	0.0230	0.2173	4.9000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112		40.7836	40.7836	2.1800e-003		40.8293
Total	**0.5143**	**6.5974**	**6.0908**	**0.0175**	**0.4371**	**0.0876**	**0.5247**	**0.1193**	**0.0806**	**0.1999**		**1,749.6694**	**1,749.6694**	**0.0145**		**1,749.9744**

3.6 Soil Hauling - 2016

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					6.5843	0.0000	6.5843	3.3723	0.0000	3.3723			0.0000			0.0000
Off-Road	2.9858	31.9365	21.2535	0.0235		1.6972	1.6972		1.5614	1.5614	0.0000	2,446.4343	2,446.4343	0.7379		2,461.9309
Total	**2.9858**	**31.9365**	**21.2535**	**0.0235**	**6.5843**	**1.6972**	**8.2814**	**3.3723**	**1.5614**	**4.9337**	**0.0000**	**2,446.4343**	**2,446.4343**	**0.7379**		**2,461.9309**

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	0.4958	6.5744	5.8735	0.0170	0.3960	0.0873	0.4833	0.1084	0.0803	0.1887		1,708.8858	1,708.8858	0.0124		1,709.1451
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	0.0185	0.0230	0.2173	4.9000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112		40.7836	40.7836	2.1800e-003		40.8293
Total	**0.5143**	**6.5974**	**6.0908**	**0.0175**	**0.4371**	**0.0876**	**0.5247**	**0.1193**	**0.0806**	**0.1999**		**1,749.6694**	**1,749.6694**	**0.0145**		**1,749.9744**

3.7 Architectural Coating - 2016

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	3.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**4.2310**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	3.7100e-003	4.6000e-003	0.0435	1.0000e-004	8.2100e-003	6.0000e-005	8.2800e-003	2.1800e-003	6.0000e-005	2.2400e-003		8.1567	8.1567	4.4000e-004		8.1659
Total	**3.7100e-003**	**4.6000e-003**	**0.0435**	**1.0000e-004**	**8.2100e-003**	**6.0000e-005**	**8.2800e-003**	**2.1800e-003**	**6.0000e-005**	**2.2400e-003**		**8.1567**	**8.1567**	**4.4000e-004**		**8.1659**

3.7 Architectural Coating - 2016

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	3.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**4.2310**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	3.7100e-003	4.6000e-003	0.0435	1.0000e-004	8.2100e-003	6.0000e-005	8.2800e-003	2.1800e-003	6.0000e-005	2.2400e-003		8.1567	8.1567	4.4000e-004		8.1659
Total	**3.7100e-003**	**4.6000e-003**	**0.0435**	**1.0000e-004**	**8.2100e-003**	**6.0000e-005**	**8.2800e-003**	**2.1800e-003**	**6.0000e-005**	**2.2400e-003**		**8.1567**	**8.1567**	**4.4000e-004**		**8.1659**

3.8 Paving - 2016

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	3.9564	39.3762	24.2470	0.0389		2.3489	2.3489		2.1921	2.1921		3,935.1509	3,935.1509	1.0375		3,956.9392
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.9564**	**39.3762**	**24.2470**	**0.0389**		**2.3489**	**2.3489**		**2.1921**	**2.1921**		**3,935.1509**	**3,935.1509**	**1.0375**		**3,956.9392**

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	0.1112	0.1381	1.3039	2.9300e-003	0.2464	1.8500e-003	0.2483	0.0654	1.7000e-003	0.0671		244.7014	244.7014	0.0131		244.9756
Total	**0.1112**	**0.1381**	**1.3039**	**2.9300e-003**	**0.2464**	**1.8500e-003**	**0.2483**	**0.0654**	**1.7000e-003**	**0.0671**		**244.7014**	**244.7014**	**0.0131**		**244.9756**

3.8 Paving - 2016

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	3.9564	39.3762	24.2470	0.0389		2.3489	2.3489		2.1921	2.1921	0.0000	3,935.1509	3,935.1509	1.0375		3,956.9392
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.9564**	**39.3762**	**24.2470**	**0.0389**		**2.3489**	**2.3489**		**2.1921**	**2.1921**	**0.0000**	**3,935.1509**	**3,935.1509**	**1.0375**		**3,956.9392**

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	0.1112	0.1381	1.3039	2.9300e-003	0.2464	1.8500e-003	0.2483	0.0654	1.7000e-003	0.0671		244.7014	244.7014	0.0131		244.9756
Total	**0.1112**	**0.1381**	**1.3039**	**2.9300e-003**	**0.2464**	**1.8500e-003**	**0.2483**	**0.0654**	**1.7000e-003**	**0.0671**		**244.7014**	**244.7014**	**0.0131**		**244.9756**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0765	0.1749	0.7918	1.7400e-003	0.1236	2.2300e-003	0.1258	0.0330	2.0500e-003	0.0350		147.0365	147.0365	6.1700e-003		147.1661
Unmitigated	0.0765	0.1749	0.7918	1.7400e-003	0.1236	2.2300e-003	0.1258	0.0330	2.0500e-003	0.0350		147.0365	147.0365	6.1700e-003		147.1661

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	20.00	20.00	20.00	58,390	58,390
Total	20.00	20.00	20.00	58,390	58,390

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 Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510423	0.073380	0.192408	0.132453	0.036550	0.005219	0.012745	0.022253	0.001862	0.002079	0.006550	0.000609	0.003468

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive 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	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3658	18.3658	3.5000e-004	3.4000e-004	18.4776
NaturalGas Unmitigated	1.9800e-003	0.0180	0.0151	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		21.5955	21.5955	4.1000e-004	4.0000e-004	21.7269

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 Heavy Industry	183.562	1.9800e-003	0.0180	0.0151	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		21.5955	21.5955	4.1000e-004	4.0000e-004	21.7269
Total		**1.9800e-003**	**0.0180**	**0.0151**	**1.1000e-004**		**1.3700e-003**	**1.3700e-003**		**1.3700e-003**	**1.3700e-003**		**21.5955**	**21.5955**	**4.1000e-004**	**4.0000e-004**	**21.7269**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0.15611	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3658	18.3658	3.5000e-004	3.4000e-004	18.4776
Total		**1.6800e-003**	**0.0153**	**0.0129**	**9.0000e-005**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**		**18.3658**	**18.3658**	**3.5000e-004**	**3.4000e-004**	**18.4776**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2776	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3200e-003
Unmitigated	0.2776	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3200e-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	0.0635					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2140					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3200e-003
Total	**0.2776**	**1.0000e-005**	**1.0400e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**		**2.3200e-003**

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	0.0635					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2140					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3200e-003
Total	**0.2776**	**1.0000e-005**	**1.0400e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**		**2.3200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Vegetation

Escondido MFRO

San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	10.00	1000sqft	3.30	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2017
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The Heavy Industrial is the closest land use type to the MFRO.

Construction Phase - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment -

Off-road Equipment - Based on project specific information

Grading - Based on project specific information and assumptions

Trips and VMT - Based on project specific information and 20 cubic yard trucks

Vehicle Trips - based on 20 trips max per day

Energy Use - Used refrigerated warehouse defaults as more appropriate for the project. Lighting modified to 1/10 of Refrigerated warhouse due to limited occupation.

Water And Wastewater - Defaults used

Solid Waste - Defaults used

Construction Off-road Equipment Mitigation -

Energy Mitigation - Upgrades model to account for 2013 Title 24 requirements

Water Mitigation - Updates model to account for Title 24 requirements

Waste Mitigation - Updates model to account for the reduction level achieved by the state to date

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	60.00
tblConstructionPhase	NumDays	230.00	220.00
tblConstructionPhase	NumDays	8.00	75.00
tblConstructionPhase	NumDays	18.00	22.00
tblConstructionPhase	NumDays	5.00	22.00
tblConstructionPhase	NumDays	8.00	22.00

tblConstructionPhase	NumDays	8.00	75.00
tblConstructionPhase	PhaseEndDate	8/23/2016	11/23/2016
tblConstructionPhase	PhaseEndDate	3/17/2017	12/2/2016
tblConstructionPhase	PhaseEndDate	5/16/2016	4/14/2016
tblConstructionPhase	PhaseEndDate	12/23/2016	11/30/2016
tblConstructionPhase	PhaseEndDate	1/3/2017	5/31/2016
tblConstructionPhase	PhaseEndDate	7/28/2016	5/13/2016
tblConstructionPhase	PhaseStartDate	6/1/2016	9/1/2016
tblConstructionPhase	PhaseStartDate	5/14/2016	2/1/2016
tblConstructionPhase	PhaseStartDate	2/2/2016	1/1/2016
tblConstructionPhase	PhaseStartDate	11/24/2016	11/1/2016
tblConstructionPhase	PhaseStartDate	12/3/2016	5/1/2016
tblConstructionPhase	PhaseStartDate	4/15/2016	2/1/2016
tblEnergyUse	LightingElect	3.25	0.41
tblEnergyUse	NT24E	4.27	27.88
tblEnergyUse	NT24NG	7.25	0.02
tblEnergyUse	T24E	1.48	2.53
tblEnergyUse	T24NG	4.54	6.68
tblGrading	MaterialExported	0.00	5,000.00
tblGrading	MaterialExported	0.00	5,000.00
tblLandUse	LotAcreage	0.23	3.30
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.37	0.37

tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.30	0.30
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors

tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	HaulingTripNumber	625.00	500.00
tblTripsAndVMT	HaulingTripNumber	625.00	500.00
tblTripsAndVMT	WorkerTripNumber	30.00	23.00
tblTripsAndVMT	WorkerTripNumber	30.00	25.00
tblTripsAndVMT	WorkerTripNumber	35.00	30.00
tblTripsAndVMT	WorkerTripNumber	43.00	38.00
tblTripsAndVMT	WorkerTripNumber	10.00	5.00
tblVehicleTrips	ST_TR	1.50	2.00
tblVehicleTrips	SU_TR	1.50	2.00
tblVehicleTrips	WD_TR	1.50	2.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	27.2641	252.4289	175.7337	0.2476	32.8817	14.9315	47.8132	17.0361	14.0815	31.1176	0.0000	24,673.1412	24,673.1412	5.3645	0.0000	24,785.7951
Total	**27.2641**	**252.4289**	**175.7337**	**0.2476**	**32.8817**	**14.9315**	**47.8132**	**17.0361**	**14.0815**	**31.1176**	**0.0000**	**24,673.1412**	**24,673.1412**	**5.3645**	**0.0000**	**24,785.7951**

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					
2016	27.2641	252.4289	175.7337	0.2476	32.8817	14.9315	47.8132	17.0361	14.0815	31.1176	0.0000	24,673.1412	24,673.1412	5.3645	0.0000	24,785.7951
Total	**27.2641**	**252.4289**	**175.7337**	**0.2476**	**32.8817**	**14.9315**	**47.8132**	**17.0361**	**14.0815**	**31.1176**	**0.0000**	**24,673.1412**	**24,673.1412**	**5.3645**	**0.0000**	**24,785.7951**

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

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	0.2776	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3200e-003
Energy	1.9800e-003	0.0180	0.0151	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		21.5955	21.5955	4.1000e-004	4.0000e-004	21.7269
Mobile	0.0719	0.1646	0.7580	1.8300e-003	0.1236	2.2200e-003	0.1258	0.0330	2.0400e-003	0.0350		154.4916	154.4916	6.1700e-003		154.6211
Total	**0.3514**	**0.1826**	**0.7742**	**1.9400e-003**	**0.1236**	**3.5900e-003**	**0.1271**	**0.0330**	**3.4100e-003**	**0.0364**		**176.0893**	**176.0893**	**6.5900e-003**	**4.0000e-004**	**176.3503**

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	0.2776	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3200e-003
Energy	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3658	18.3658	3.5000e-004	3.4000e-004	18.4776
Mobile	0.0719	0.1646	0.7580	1.8300e-003	0.1236	2.2200e-003	0.1258	0.0330	2.0400e-003	0.0350		154.4916	154.4916	6.1700e-003		154.6211
Total	**0.3511**	**0.1799**	**0.7719**	**1.9200e-003**	**0.1236**	**3.3800e-003**	**0.1269**	**0.0330**	**3.2000e-003**	**0.0362**		**172.8596**	**172.8596**	**6.5300e-003**	**3.4000e-004**	**173.1010**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.09	1.48	0.29	1.03	0.00	5.85	0.17	0.00	6.16	0.58	0.00	1.83	1.83	0.91	15.00	1.84

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2016	2/1/2016	5	22	
2	Grading	Grading	1/1/2016	4/14/2016	5	75	
3	Drainage/Utilities/Subgrade	Grading	2/1/2016	5/13/2016	5	75	
4	Building Construction	Building Construction	2/1/2016	12/2/2016	5	220	
5	Soil Hauling	Grading	5/1/2016	5/31/2016	5	22	
6	Architectural Coating	Architectural Coating	9/1/2016	11/23/2016	5	60	
7	Paving	Paving	11/1/2016	11/30/2016	5	22	

Acres of Grading (Site Preparation Phase): 11

Acres of Grading (Grading Phase): 37.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 15,000; Non-Residential Outdoor: 5,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Skid Steer Loaders	1	8.00	64	0.37
Paving	Sweepers/Scrubbers	1	4.00	64	0.46
Paving	Surfacing Equipment	1	8.00	253	0.30
Paving	Cement and Mortar Mixers	2	6.00	9	0.56

Soil Hauling	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Drainage/Utilities/Subgrade	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Drainage/Utilities/Subgrade	Rubber Tired Dozers	1	8.00	255	0.40
Soil Hauling	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Architectural Coating	Air Compressors	1	6.00	78	0.48
Drainage/Utilities/Subgrade	Excavators	1	8.00	162	0.38
Paving	Plate Compactors	1	8.00	8	0.43
Building Construction	Cranes	2	7.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Grading	Excavators	1	8.00	162	0.38
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	4.00	80	0.38
Building Construction	Air Compressors	3	8.00	78	0.48
Drainage/Utilities/Subgrade	Air Compressors	1	8.00	78	0.48
Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Drainage/Utilities/Subgrade	Bore/Drill Rigs	1	8.00	205	0.50
Paving	Paving Equipment	1	6.00	130	0.36
Grading	Air Compressors	1	8.00	78	0.48
Building Construction	Welders	1	8.00	46	0.45
Soil Hauling	Graders	1	8.00	174	0.41
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56

Paving	Forklifts	1	8.00	89	0.20
Drainage/Utilities/Subgrade	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Soil Hauling	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Air Compressors	1	8.00	78	0.48
Site Preparation	Concrete/Industrial Saws	1	4.00	81	0.73
Site Preparation	Plate Compactors	1	8.00	8	0.43
Site Preparation	Generator Sets	1	8.00	84	0.74
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Skid Steer Loaders	1	4.00	64	0.37
Site Preparation	Sweepers/Scrubbers	1	4.00	64	0.46
Grading	Concrete/Industrial Saws	1	4.00	81	0.73
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Forklifts	1	8.00	89	0.20
Grading	Generator Sets	1	8.00	84	0.74
Grading	Skid Steer Loaders	1	4.00	64	0.37
Grading	Sweepers/Scrubbers	1	4.00	64	0.46
Drainage/Utilities/Subgrade	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Subgrade	Cranes	1	8.00	226	0.29
Drainage/Utilities/Subgrade	Forklifts	1	8.00	89	0.20
Drainage/Utilities/Subgrade	Generator Sets	1	8.00	84	0.74
Drainage/Utilities/Subgrade	Pumps	1	4.00	84	0.74
Drainage/Utilities/Subgrade	Skid Steer Loaders	1	8.00	64	0.37
Drainage/Utilities/Subgrade	Sweepers/Scrubbers	1	4.00	64	0.46
Drainage/Utilities/Subgrade	Trenchers	1	8.00	80	0.50
Drainage/Utilities/Subgrade	Welders	1	8.00	46	0.45
Building Construction	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Pumps	1	4.00	84	0.74
Building Construction	Skid Steer Loaders	1	8.00	64	0.37

Building Construction	Sweepers/Scrubbers	1	4.00	64	0.46
Paving	Graders	1	8.00	174	0.41
Paving	Pumps	1	8.00	84	0.74

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
Drainage/Utilities/Subgrade	17	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	12	23.00	0.00	500.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	12	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	4.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	14	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Soil Hauling	4	5.00	0.00	500.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Site Preparation - 2016

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					18.6284	0.0000	18.6284	9.9928	0.0000	9.9928			0.0000			0.0000
Off-Road	7.1633	71.4238	51.3408	0.0555		3.9908	3.9908		3.7343	3.7343		5,630.1222	5,630.1222	1.4309		5,660.1700
Total	**7.1633**	**71.4238**	**51.3408**	**0.0555**	**18.6284**	**3.9908**	**22.6193**	**9.9928**	**3.7343**	**13.7271**		**5,630.1222**	**5,630.1222**	**1.4309**		**5,660.1700**

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	0.4454	6.3690	4.5465	0.0170	0.3960	0.0870	0.4830	0.1084	0.0800	0.1885		1,712.9030	1,712.9030	0.0122		1,713.1590
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	0.0804	0.0944	1.0290	2.3900e-003	0.1889	1.4200e-003	0.1904	0.0501	1.3000e-003	0.0514		199.7624	199.7624	0.0100		199.9725
Total	**0.5258**	**6.4633**	**5.5755**	**0.0194**	**0.5850**	**0.0884**	**0.6734**	**0.1586**	**0.0813**	**0.2399**		**1,912.6654**	**1,912.6654**	**0.0222**		**1,913.1316**

3.2 Site Preparation - 2016

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					18.6284	0.0000	18.6284	9.9928	0.0000	9.9928			0.0000			0.0000
Off-Road	7.1633	71.4238	51.3408	0.0555		3.9908	3.9908		3.7343	3.7343	0.0000	5,630.1222	5,630.1222	1.4309		5,660.1700
Total	**7.1633**	**71.4238**	**51.3408**	**0.0555**	**18.6284**	**3.9908**	**22.6193**	**9.9928**	**3.7343**	**13.7271**	**0.0000**	**5,630.1222**	**5,630.1222**	**1.4309**		**5,660.1700**

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	0.4454	6.3690	4.5465	0.0170	0.3960	0.0870	0.4830	0.1084	0.0800	0.1885		1,712.9030	1,712.9030	0.0122		1,713.1590
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	0.0804	0.0944	1.0290	2.3900e-003	0.1889	1.4200e-003	0.1904	0.0501	1.3000e-003	0.0514		199.7624	199.7624	0.0100		199.9725
Total	**0.5258**	**6.4633**	**5.5755**	**0.0194**	**0.5850**	**0.0884**	**0.6734**	**0.1586**	**0.0813**	**0.2399**		**1,912.6654**	**1,912.6654**	**0.0222**		**1,913.1316**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	5.3063	50.1093	35.0843	0.0446		3.0841	3.0841		2.9001	2.9001		4,494.7508	4,494.7508	1.0884		4,517.6068
Total	**5.3063**	**50.1093**	**35.0843**	**0.0446**	**6.5523**	**3.0841**	**9.6364**	**3.3675**	**2.9001**	**6.2676**		**4,494.7508**	**4,494.7508**	**1.0884**		**4,517.6068**

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	0.0874	0.1026	1.1185	2.6000e-003	0.2054	1.5400e-003	0.2069	0.0545	1.4200e-003	0.0559		217.1330	217.1330	0.0109		217.3615
Total	**0.0874**	**0.1026**	**1.1185**	**2.6000e-003**	**0.2054**	**1.5400e-003**	**0.2069**	**0.0545**	**1.4200e-003**	**0.0559**		**217.1330**	**217.1330**	**0.0109**		**217.3615**

3.3 Grading - 2016

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	5.3063	50.1093	35.0843	0.0446		3.0841	3.0841		2.9001	2.9001	0.0000	4,494.7508	4,494.7508	1.0884		4,517.6068
Total	**5.3063**	**50.1093**	**35.0843**	**0.0446**	**6.5523**	**3.0841**	**9.6364**	**3.3675**	**2.9001**	**6.2676**	**0.0000**	**4,494.7508**	**4,494.7508**	**1.0884**		**4,517.6068**

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	0.0874	0.1026	1.1185	2.6000e-003	0.2054	1.5400e-003	0.2069	0.0545	1.4200e-003	0.0559		217.1330	217.1330	0.0109		217.3615
Total	**0.0874**	**0.1026**	**1.1185**	**2.6000e-003**	**0.2054**	**1.5400e-003**	**0.2069**	**0.0545**	**1.4200e-003**	**0.0559**		**217.1330**	**217.1330**	**0.0109**		**217.3615**

3.4 Drainage/Utilities/Subgrade - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	7.9008	74.6871	48.0536	0.0693		4.4454	4.4454		4.1643	4.1643		7,002.5868	7,002.5868	1.8295		7,041.0067
Total	**7.9008**	**74.6871**	**48.0536**	**0.0693**	**6.5523**	**4.4454**	**10.9978**	**3.3675**	**4.1643**	**7.5318**		**7,002.5868**	**7,002.5868**	**1.8295**		**7,041.0067**

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	0.1328	0.1559	1.7001	3.9600e-003	0.3122	2.3400e-003	0.3145	0.0828	2.1500e-003	0.0850		330.0421	330.0421	0.0165		330.3894
Total	**0.1328**	**0.1559**	**1.7001**	**3.9600e-003**	**0.3122**	**2.3400e-003**	**0.3145**	**0.0828**	**2.1500e-003**	**0.0850**		**330.0421**	**330.0421**	**0.0165**		**330.3894**

3.4 Drainage/Utilities/Subgrade - 2016

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	7.9008	74.6871	48.0536	0.0693		4.4454	4.4454		4.1643	4.1643	0.0000	7,002.5868	7,002.5868	1.8295		7,041.0067
Total	**7.9008**	**74.6871**	**48.0536**	**0.0693**	**6.5523**	**4.4454**	**10.9978**	**3.3675**	**4.1643**	**7.5318**	**0.0000**	**7,002.5868**	**7,002.5868**	**1.8295**		**7,041.0067**

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	0.1328	0.1559	1.7001	3.9600e-003	0.3122	2.3400e-003	0.3145	0.0828	2.1500e-003	0.0850		330.0421	330.0421	0.0165		330.3894
Total	**0.1328**	**0.1559**	**1.7001**	**3.9600e-003**	**0.3122**	**2.3400e-003**	**0.3145**	**0.0828**	**2.1500e-003**	**0.0850**		**330.0421**	**330.0421**	**0.0165**		**330.3894**

3.5 Building Construction - 2016

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	6.1129	49.2811	32.4596	0.0514		3.3157	3.3157		3.1951	3.1951		5,003.3819	5,003.3819	0.9640		5,023.6260
Total	**6.1129**	**49.2811**	**32.4596**	**0.0514**		**3.3157**	**3.3157**		**3.1951**	**3.1951**		**5,003.3819**	**5,003.3819**	**0.9640**		**5,023.6260**

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	0.0209	0.1896	0.2225	4.8000e-004	0.0133	2.8700e-003	0.0161	3.7900e-003	2.6400e-003	6.4200e-003		47.7177	47.7177	3.7000e-004		47.7254
Worker	0.0140	0.0164	0.1790	4.2000e-004	0.0329	2.5000e-004	0.0331	8.7200e-003	2.3000e-004	8.9400e-003		34.7413	34.7413	1.7400e-003		34.7778
Total	**0.0348**	**0.2060**	**0.4014**	**9.0000e-004**	**0.0461**	**3.1200e-003**	**0.0493**	**0.0125**	**2.8700e-003**	**0.0154**		**82.4590**	**82.4590**	**2.1100e-003**		**82.5033**

3.5 Building Construction - 2016

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	6.1129	49.2811	32.4596	0.0514		3.3157	3.3157		3.1951	3.1951	0.0000	5,003.3819	5,003.3819	0.9640		5,023.6260
Total	**6.1129**	**49.2811**	**32.4596**	**0.0514**		**3.3157**	**3.3157**		**3.1951**	**3.1951**	**0.0000**	**5,003.3819**	**5,003.3819**	**0.9640**		**5,023.6260**

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	0.0209	0.1896	0.2225	4.8000e-004	0.0133	2.8700e-003	0.0161	3.7900e-003	2.6400e-003	6.4200e-003		47.7177	47.7177	3.7000e-004		47.7254
Worker	0.0140	0.0164	0.1790	4.2000e-004	0.0329	2.5000e-004	0.0331	8.7200e-003	2.3000e-004	8.9400e-003		34.7413	34.7413	1.7400e-003		34.7778
Total	**0.0348**	**0.2060**	**0.4014**	**9.0000e-004**	**0.0461**	**3.1200e-003**	**0.0493**	**0.0125**	**2.8700e-003**	**0.0154**		**82.4590**	**82.4590**	**2.1100e-003**		**82.5033**

3.6 Soil Hauling - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5843	0.0000	6.5843	3.3723	0.0000	3.3723			0.0000			0.0000
Off-Road	2.9858	31.9365	21.2535	0.0235		1.6972	1.6972		1.5614	1.5614		2,446.4343	2,446.4343	0.7379		2,461.9309
Total	**2.9858**	**31.9365**	**21.2535**	**0.0235**	**6.5843**	**1.6972**	**8.2814**	**3.3723**	**1.5614**	**4.9337**		**2,446.4343**	**2,446.4343**	**0.7379**		**2,461.9309**

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	0.4454	6.3690	4.5465	0.0170	0.3960	0.0870	0.4830	0.1084	0.0800	0.1885		1,712.9030	1,712.9030	0.0122		1,713.1590
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	0.0175	0.0205	0.2237	5.2000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112		43.4266	43.4266	2.1800e-003		43.4723
Total	**0.4629**	**6.3895**	**4.7702**	**0.0175**	**0.4371**	**0.0873**	**0.5244**	**0.1193**	**0.0803**	**0.1997**		**1,756.3296**	**1,756.3296**	**0.0144**		**1,756.6313**

3.6 Soil Hauling - 2016

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					6.5843	0.0000	6.5843	3.3723	0.0000	3.3723			0.0000			0.0000
Off-Road	2.9858	31.9365	21.2535	0.0235		1.6972	1.6972		1.5614	1.5614	0.0000	2,446.4343	2,446.4343	0.7379		2,461.9309
Total	**2.9858**	**31.9365**	**21.2535**	**0.0235**	**6.5843**	**1.6972**	**8.2814**	**3.3723**	**1.5614**	**4.9337**	**0.0000**	**2,446.4343**	**2,446.4343**	**0.7379**		**2,461.9309**

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	0.4454	6.3690	4.5465	0.0170	0.3960	0.0870	0.4830	0.1084	0.0800	0.1885		1,712.9030	1,712.9030	0.0122		1,713.1590
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	0.0175	0.0205	0.2237	5.2000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112		43.4266	43.4266	2.1800e-003		43.4723
Total	**0.4629**	**6.3895**	**4.7702**	**0.0175**	**0.4371**	**0.0873**	**0.5244**	**0.1193**	**0.0803**	**0.1997**		**1,756.3296**	**1,756.3296**	**0.0144**		**1,756.6313**

3.7 Architectural Coating - 2016

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	3.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**4.2310**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	3.5000e-003	4.1000e-003	0.0447	1.0000e-004	8.2100e-003	6.0000e-005	8.2800e-003	2.1800e-003	6.0000e-005	2.2400e-003		8.6853	8.6853	4.4000e-004		8.6945
Total	**3.5000e-003**	**4.1000e-003**	**0.0447**	**1.0000e-004**	**8.2100e-003**	**6.0000e-005**	**8.2800e-003**	**2.1800e-003**	**6.0000e-005**	**2.2400e-003**		**8.6853**	**8.6853**	**4.4000e-004**		**8.6945**

3.7 Architectural Coating - 2016

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	3.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**4.2310**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	3.5000e-003	4.1000e-003	0.0447	1.0000e-004	8.2100e-003	6.0000e-005	8.2800e-003	2.1800e-003	6.0000e-005	2.2400e-003		8.6853	8.6853	4.4000e-004		8.6945
Total	**3.5000e-003**	**4.1000e-003**	**0.0447**	**1.0000e-004**	**8.2100e-003**	**6.0000e-005**	**8.2800e-003**	**2.1800e-003**	**6.0000e-005**	**2.2400e-003**		**8.6853**	**8.6853**	**4.4000e-004**		**8.6945**

3.8 Paving - 2016

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	3.9564	39.3762	24.2470	0.0389		2.3489	2.3489		2.1921	2.1921		3,935.1509	3,935.1509	1.0375		3,956.9392
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.9564**	**39.3762**	**24.2470**	**0.0389**		**2.3489**	**2.3489**		**2.1921**	**2.1921**		**3,935.1509**	**3,935.1509**	**1.0375**		**3,956.9392**

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	0.1049	0.1231	1.3421	3.1200e-003	0.2464	1.8500e-003	0.2483	0.0654	1.7000e-003	0.0671		260.5596	260.5596	0.0131		260.8337
Total	**0.1049**	**0.1231**	**1.3421**	**3.1200e-003**	**0.2464**	**1.8500e-003**	**0.2483**	**0.0654**	**1.7000e-003**	**0.0671**		**260.5596**	**260.5596**	**0.0131**		**260.8337**

3.8 Paving - 2016

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	3.9564	39.3762	24.2470	0.0389		2.3489	2.3489		2.1921	2.1921	0.0000	3,935.1509	3,935.1509	1.0375		3,956.9392
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.9564**	**39.3762**	**24.2470**	**0.0389**		**2.3489**	**2.3489**		**2.1921**	**2.1921**	**0.0000**	**3,935.1509**	**3,935.1509**	**1.0375**		**3,956.9392**

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	0.1049	0.1231	1.3421	3.1200e-003	0.2464	1.8500e-003	0.2483	0.0654	1.7000e-003	0.0671		260.5596	260.5596	0.0131		260.8337
Total	**0.1049**	**0.1231**	**1.3421**	**3.1200e-003**	**0.2464**	**1.8500e-003**	**0.2483**	**0.0654**	**1.7000e-003**	**0.0671**		**260.5596**	**260.5596**	**0.0131**		**260.8337**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0719	0.1646	0.7580	1.8300e-003	0.1236	2.2200e-003	0.1258	0.0330	2.0400e-003	0.0350		154.4916	154.4916	6.1700e-003		154.6211
Unmitigated	0.0719	0.1646	0.7580	1.8300e-003	0.1236	2.2200e-003	0.1258	0.0330	2.0400e-003	0.0350		154.4916	154.4916	6.1700e-003		154.6211

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	20.00	20.00	20.00	58,390	58,390
Total	20.00	20.00	20.00	58,390	58,390

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 Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510423	0.073380	0.192408	0.132453	0.036550	0.005219	0.012745	0.022253	0.001862	0.002079	0.006550	0.000609	0.003468

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive 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	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3658	18.3658	3.5000e-004	3.4000e-004	18.4776
NaturalGas Unmitigated	1.9800e-003	0.0180	0.0151	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		21.5955	21.5955	4.1000e-004	4.0000e-004	21.7269

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 Heavy Industry	183.562	1.9800e-003	0.0180	0.0151	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		21.5955	21.5955	4.1000e-004	4.0000e-004	21.7269
Total		**1.9800e-003**	**0.0180**	**0.0151**	**1.1000e-004**		**1.3700e-003**	**1.3700e-003**		**1.3700e-003**	**1.3700e-003**		**21.5955**	**21.5955**	**4.1000e-004**	**4.0000e-004**	**21.7269**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0.15611	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3658	18.3658	3.5000e-004	3.4000e-004	18.4776
Total		**1.6800e-003**	**0.0153**	**0.0129**	**9.0000e-005**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**		**18.3658**	**18.3658**	**3.5000e-004**	**3.4000e-004**	**18.4776**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2776	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3200e-003
Unmitigated	0.2776	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3200e-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	0.0635					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2140					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3200e-003
Total	**0.2776**	**1.0000e-005**	**1.0400e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**		**2.3200e-003**

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					
Consumer Products	0.2140					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3200e-003
Architectural Coating	0.0635					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2776**	**1.0000e-005**	**1.0400e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**		**2.3200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Vegetation

APPENDIX B

Biological Resources Assessment Report and Focused Survey Report

Draft

CITY OF ESCONDIDO
MFRO FACILITY PROJECT

Biological Resources Assessment Report

Prepared for
City of Escondido

July 2015

ESA

Draft

CITY OF ESCONDIDO
MFRO FACILITY PROJECT

Biological Resources Assessment Report

Prepared for
City of Escondido

July 2015

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1. Introduction

Environmental Science Associates (ESA) conducted an analysis of biological resources for the City of Escondido's (City) Membrane Filtration/Reverse Osmosis (MFRO) Facility Project (Project), which includes the construction of an MFRO facility to treat tertiary effluent from the existing Hale Avenue Resource Recovery Facility. The MFRO facility would remove salts from the effluent so that it may supply agricultural and landscape uses, thereby lowering overall water demand.

This Biological Resources Assessment Report documents sensitive biological resources that are present or have the potential to be present that could pose a construction or operational constraint to the implementation of the Project. The information used to support this report includes the results of a field reconnaissance at the Project site and research of available literature and databases. This report also provides a review of pertinent Federal and/or State regulation, and local laws, rules, and regulations, including the California Environmental Quality Act (CEQA) that could affect the implementation of the Project. Potential impacts to biological resources and identifies mitigation consistent with the City's standards and guidelines are also summarized. This report is aimed to comprehensively document existing biological resources within the Project site and surrounding lands in order to assist in project planning and permitting.

1.1 Project Description

The proposed Project is a reverse osmosis (RO) facility where a portion of non-potable reuse (NPR) water would be sent through RO membranes to reduce salinity/chlorides in the water. The RO water will be blended with NPR water (non-RO) and sent to agricultural growers. Pretreatment to the RO system would consist of microfiltration (MF) membranes, which contain tiny openings small enough to remove particles such as suspended solids, bacteria, and protozoa. The major components of the MFRO facility are:

- Partially buried concrete MF feed tank with vertical-turbine pumps.
- MF building. This building houses the major equipment related to the MF system, including strainers, membrane skids, filtrate storage tank, air compressors and receivers, clean-in-place system, and electrical/control room.
- RO building. This building houses the major equipment related to the RO system, including energy recovery devices, high –pressure feed pumps, cartridge filters, membrane skids, clean-in-place system, hot water tank, and permeate flush tank.
- Chemical storage and feed facilities. This area will be used for storage and dosing pump facilities.
- Finished water storage and pump station.
- Surge tank.

2. Methodology

2.1 Database and Literature Review

Prior to conducting the field survey, ESA biologists conducted a database search and review of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) (Attachment A) (CDFW, 2015) and California Native Plant Society (CNPS) Rare Plant Inventory (CNPS, 2015) (Attachment B) for recorded occurrences of special-status plant and wildlife species within the Valley Center USGS quadrangle and the eight surrounding USGS quadrangles, and the U.S. Fish and Wildlife Service (USFWS) IPaC Trust Resource Report for federally-sensitive biological resources known to occur in the vicinity of the Project site (Attachment C). In addition, regional floral and faunal field guides, such as *A Manual of California Vegetation* (2009) and *The Jepson Manual* (2012), were utilized in the identification of species and suitable habitats (see References Section). Combined, the sources reviewed provided a comprehensive baseline from which to inventory the biological resources potentially occurring on the Project site and within the general area.

2.2 Field Reconnaissance

On February 26, 2015, ESA's senior biologist Rocky Brown conducted a field reconnaissance of the Project site to assess the potential for sensitive biological resources to be present. The entire site was assessed on foot and all vegetation communities were mapped on an aerial photograph, and the majority of plants and wildlife observed were noted.

3. Existing Conditions

3.1 Regional Location

The City is located approximately 12 miles from the coast in northern San Diego County. It is in a biologically unique area where inland flora and fauna integrate with more coastal forms. The majority of the City is developed with urban infrastructure; however, larger blocks of native habitat occur at its edges adjacent to unincorporated areas of San Diego County in which regionally important biological resources occur. These generally undeveloped areas include foothills, native scrub habitats, wetlands, and woodlands (City 2001).

The Project is situated within the Carlsbad Watershed, which encompasses approximately 210 square miles extending from the headwaters above Lake Wolhford to the east of the Project site to the Pacific Ocean in the west, and from the cities of Vista and Oceanside in the north to Solana Beach, Escondido, and the community of Rancho Santa Fe to the south. The cities of Carlsbad, San Marcos, and Encinitas occur entirely within this hydrologic unit, approximately 48 percent of which is urbanized. Important hydrologic features in the watershed include four coastal lagoons, three major creeks, and two large water storage reservoirs (Project Clean Water 2015).

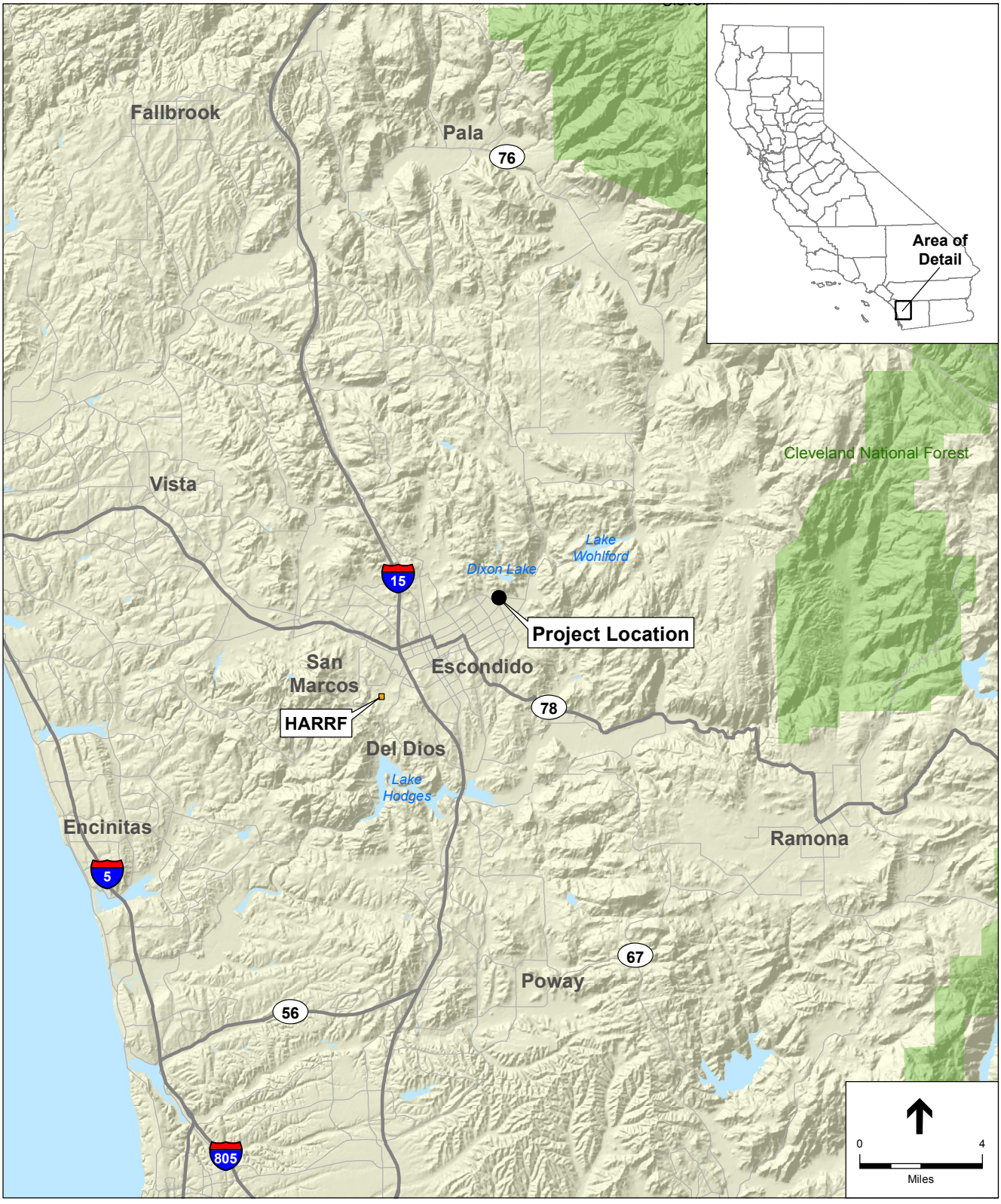
The Project parcel is within the area covered by the North County Multiple Habitat Conservation Program (MHCP), which is a comprehensive conservation planning process that addresses the needs of multiple plant and animal species in North Western San Diego County. The MHCP

encompasses the cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista, each of which (except Solana Beach) is responsible for preparing its own subarea plan. The goal of the MHCP is to conserve approximately 19,000 acres of habitat, of which roughly 8,800 acres are already in public ownership and contribute toward the habitat preserve system for the protection of more than 80 rare, threatened, or endangered species (SANDAG 2003).

The City has prepared a draft subarea plan, which encompasses the entire City boundary and approximately 3,000 acres of unincorporated areas of San Diego County land within the City's sphere of influence. A public review draft of the subarea plan was released in 2001, but has not been adopted. The Project site is not located within any of the City's MHCP focused planning areas, in which some lands are proposed to be dedicated for open space and habitat conservation.

3.2 Project Location

As depicted on **Figures 1 - Regional Location Map** and **Figure 2 - Study Area Map**, the MFRO facility is proposed to be constructed on a 3.23 acre parcel of land owned by the City of Escondido, northwest of East Washington Avenue between North Citrus Avenue and East El Norte Parkway and within the United States Geological Survey (USGS) Valley Center 7.5-minute topographic quadrangle. The Project site is relatively flat and is at approximately 720 feet above mean sea level (amsl), and adjacent land uses include residential and light commercial.

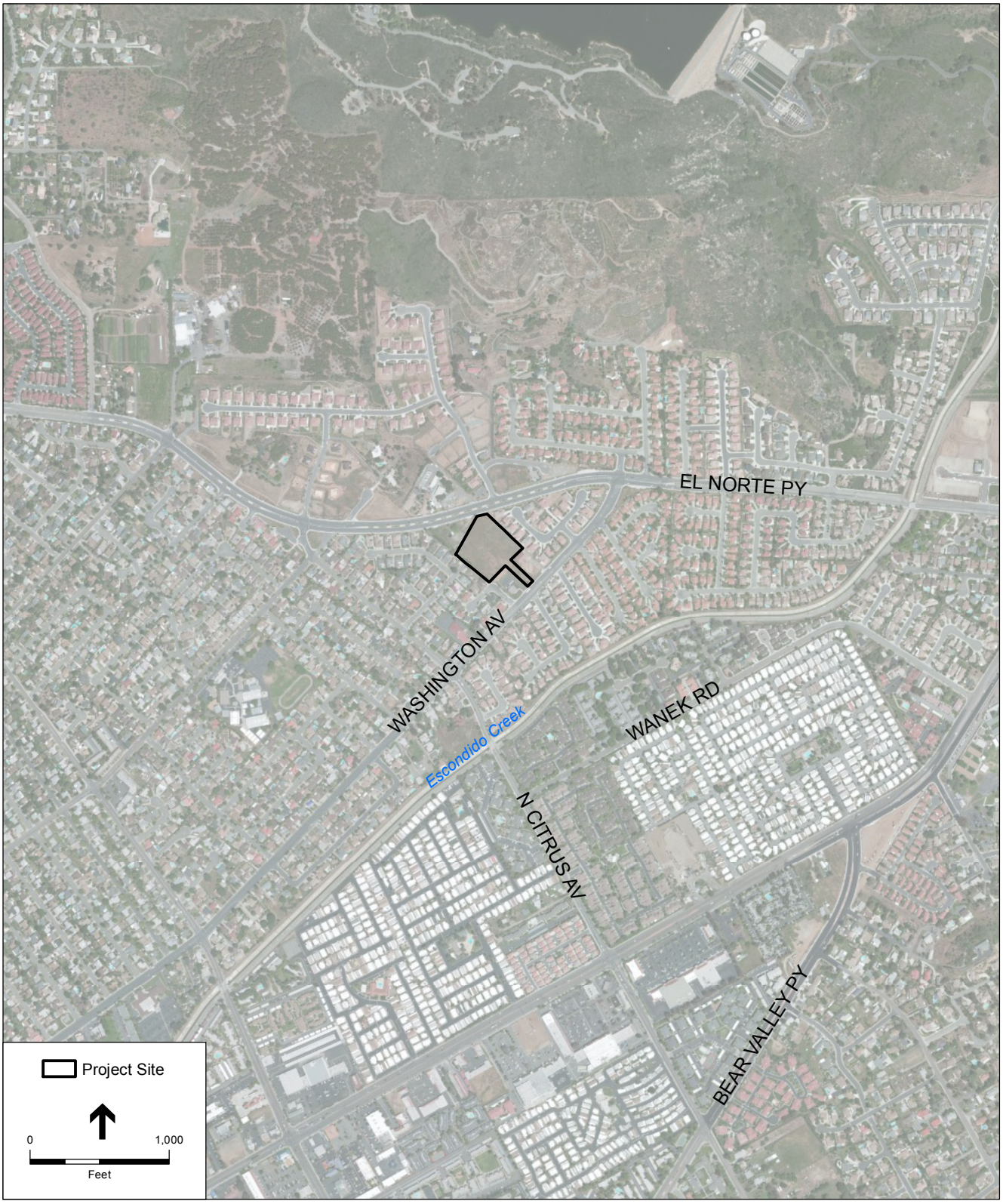


SOURCE: ESRI.

Escondido MFRO Facility Project . 140480.02

Figure 1

Regional Location Map



SOURCE: ESRI.

Escondido MFRO Facility Project . 140480.02

Figure 2

Study Area Map

3.3 Soils

According to the U.S Department of Agriculture, Natural Resources Conservation Service maps (NRCS, 2015), there are two soil types present on the Project site – Ramona sandy loam and Greenfield sandy loam. As shown on **Figure 3 – Soil Associations Map**, the majority of the site is comprised of the Ramona sandy loam unit. These soil types are described below.

Ramona Sandy Loam

The Ramona association occurs from 250 to 3,500 feet amsl on 0 to 2 percent slopes. This map unit is comprised of a combination of Ramona family and similar soils (85 percent) and other minor components (15 percent). These soils are associated with terraces and are formed from alluvium derived from granite. They are relatively deep and well drained with low runoff. This soil association occupies the southeastern three-quarters of the Project parcel.

Greenfield Sandy Loam

The Greenfield association occurs from 100 to 1,500 feet amsl on 2 to 5 percent slopes. This map unit is comprised of a combination of Greenfield family and similar soils (85 percent) and other minor components (15 percent). These soils are associated with alluvial fans and are formed from alluvium derived from granite. They are relatively deep and well drained with very low runoff. This soil association occupies the northwestern quarter of the Project parcel.

3.4 Vegetation Communities

Annual Brome Grassland

The Project site is situated within an urban environment and appears to be highly disturbed from ongoing weed control activities, such as disking. The habitat type present on the Project site is characterized as Annual Brome Grassland. Typically, this habitat type is comprised of at least 60 percent cover of non-native brome grasses often interspersed with other non-native species, which is evident on the Project site. The non-native grasses that are dominant include ripgut brome (*Bromus diandrus*), as well as false barley (*Hordeum murinum*) and wild oat (*Avena fatua*). Other herbaceous non-native species that were observed include cheeseweed (*Malva parviflora*), red-stem filaree (*Erodium cicutarium*), Russian thistle (*Salsola* sp.), and field mustard (*Brassica rapa*). This community was characterized in accordance with *A Manual of California Vegetation*, Second Edition (Sawyer et al, 2009). Common plant names were taken from J.C. Hickman (1993).

Various Trees

Several trees are distributed around the edges of the parcel. These include non-native and landscaping trees such as Peruvian pepper (*Schinus molle)*, Brazilian pepper (*S. terebinthifolius)*, Mexican fan palm (*Washingtonia robusta*), eucalyptus (*Eucalyptus* sp.), and coast live oak (*Quercus agrifolia*). The majority of the trees located on the Project site occur along the southwestern fence line.

SOURCE: ESRI, USDA Natural Resources Conservation Service

Escondido MFRO Facility Project . 140480.02

Figure 3

Soil Associations Map

3.5 Common Wildlife

While the Project site is located in an urban area and is surrounded by development, and the vegetation present is almost exclusively non-native, the area may provide habitat for a variety of native and non-native plants and animals that are tolerant of an urban environment. Wildlife observed during the field reconnaissance included a western fence lizard (*Sceloporus occidentalis*) and Anna's hummingbird (*Calypte anna*). Several small- to medium-sized (1-3 inches in diameter) burrows were also observed on the site with rodent scat in the vicinity, indicating rodents such as common field mice are present on the site.

Other common species that may occur include species that are tolerant of disturbed conditions, such as resident and migratory birds including mourning dove (*Zenaida macroura*), western scrub-jay (*Aphelocoma californica*), common raven (*Corvus corax*), northern mockingbird (*Mimus polyglottos*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), white-crowned sparrow (*Zonotrichia leucophrys*), house finch (*Carpodacus mexicanus*), and lesser goldfinch (*Carduelis psaltria*). Grasslands also serve as habitat for other small mammals such as the pocket gopher (*Geomyidae*), California vole (*Microtus californicus*), and California ground squirrel (*Spermophilus beecheyi*) that in turn provide a prey base for foraging raptors.

3.6 Special-Status Biological Resources

Special-status species are plants and animals that are legally protected under the CESA/FESA or other regulations and species that are considered sufficiently rare or sensitive by the scientific community to qualify for such listing. These species are categorized as follows:

- Plants or animals listed or proposed for listing as threatened or endangered under the FESA (50 Code of Federal regulations [CFR] 17.12 [listed plants], 17.11 [listed animals];
- Plants or animals that are candidates for possible future listing as threatened or endangered under the FESA (61 FR 40, February 28, 1996);
- Plants or animals listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 California Code of Regulations [CCR] 670.5);
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);
- Plants that meet the definitions of rare and endangered under CEQA (State CEQA Guidelines, Section 15380);
- Plants considered by CNPS to be "rare, threatened or endangered in California" (Lists 1A, 1B, and 2 in CNPS Inventory 2015);
- Plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4 in CNPS 2015), which may be included as special-status species on the basis of local significance or recent biological information; and
- Animals fully protected in California (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

Based on a review of the CNDDB and CNPS and IPaC databases, a number of special-status species are known to occur in the region, which includes, 83 plants, 5 invertebrates, one fish, 3 amphibians, 9 reptiles, 21 birds, and 19 mammals. **Table 1** lists these special-status species and summarizes their potential to occur on the Project site based on the suitability of the habitat (i.e., plants, soils, level of disturbance, adjacent land uses, etc) and known distributions in the area. The potential for a species or sensitive natural community to occur on the project site is included, based on the definitions indicated below. Species with a moderate or higher potential to occur on the site are further discussed after Table 1.

- **Low Potential:** The project area 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..
- **Moderate Potential:** The project area and/or immediate vicinity provides decent habitat for a particular species. For example, proper soils may be present, but the desired vegetation assemblage or density is less than ideal; or soils and vegetation are suitable, but the site is outside of the known elevation range of the species.
- **High Potential:** The project area and/or immediate vicinity provide excellent habitat (i.e., soils, vegetation assemblage, and topography) for a particular species and/or there are known occurrences in the general vicinity of the project area.
- **Present:** The species (or natural vegetation community) was observed within the project area and/or immediate vicinity during surveys, or the species has been previously reported within the project area.

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
PLANTS			
San Diego thorn-mint *Acanthomintha ilicifolia*	FT, SE, CRPR 1B.1	Clay soils within chaparral, coastal scrub, valley and foothill grassland and vernal pools. 10-960 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
California adolphia *Adolphia californica*	CRPR 2B.1	Clay soils within chaparral, coastal scrub and valley and foothill grassland. 45-740 meters.	**Low.** Suitable habitat for this perennial deciduous shrub is not present within the project site.
San Diego ambrosia *Ambrosia pumila*	FE, CRPR 1B.1	Sandy loam or clay soils within chaparral, coastal scrub, valley and foothill grassland and vernal pools. This species is commonly found in disturbed areas. 20-415 m elevation.	**Moderate.** Chaparral and scrub habitat is present less than one mile from the project site and this species is known to occur in disturbed areas. This species may occur in the ruderal vegetation within the project site.
Del Mar manzanita *Arctostaphylos glandulosa* ssp. *crassifolia*	FE, CRPR 1B.1	Sandy substrate within chaparral. 0-365 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present within the project site.
Rainbow manzanita *Arctostaphylos rainbowensis*	CRPR 1B.1	Chaparral. 205-670 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present within the project site.
San Diego sagewort *Artemisia palmeri*	CRPR 4.2	Sandy substrate within chaparral, coastal scrub, riparian forest, scrub and woodland.	**Low.** Suitable habitat for this perennial deciduous shrub is not present within the project site.
Western spleenwort *Asplenium vespertinum*	CRPR 4.2	Rocky substrate within chaparral, cismontane woodland and coastal scrub. 180-1,000 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present within the project site.
San Diego milk-vetch *Astragalus oocarpus*	CRPR 1B.1	Chaparral and cismontane woodland. 305-1,524 m elevation.	**Low.** Suitable habitat for this perennial herb is not present and the project site is located outside of the elevation range for the species.
Coulter's saltbush *Atriplex coulteri*	CRPR 1B.2	Alkaline or clay soils within coastal bluff scrub, dunes, coastal scrub and valley and foothill grassland. 3-460 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
South Coast saltscale *Atriplex pacifica*	CRPR 1B.2	Coastal bluff scrub, dunes, coastal scrub and playas. 0-140 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Parish's brittlescale *Atriplex parishii*	CRPR 1B.1	Alkaline soils within chenopod scrub, playas and vernal pools. 25-1,900 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Encinitas Baccharis *Baccharis vanessae*	FT, SE, CRPR 1B.1	Sandstone soils within chaparral and cismontane woodland. 60-720 m elevation.	**Low.** Suitable habitat for this perennial deciduous shrub is not present within the project site.
Nevin's barberry *Berberis nevinii*	FE, SE, CRPR 1B.1	Sandy or gravelly substrate within chaparral, cismontane woodland and coastal and riparian scrub. 274-825 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present and the project site is located outside of the elevation range for the species.
San Diego goldenstar *Bloomeria clevlandii*	CRPR 1B.1	Clay soils within chaparral, coastal scrub, valley and foothill grassland and vernal pools. 50-465 m elevation.	**Low.** Suitable habitat for this perennial bulbiferous herb is not present within the project site.
Thread-leaved brodiaea *Brodiaea filifolia*	FT, SE, CRPR 1B.1	Often clay soils within chaparral, cismontane woodland, coastal scrub, playas, valley and foothill grassland and vernal pools. 25-1,120 m elevation.	**Low.** Suitable habitat for this perennial bulbiferous herb is not present within the project site.
Orcutt's brodiaea *Brodiaea orcuttii*	CRPR 1B.1	Often clay, sometimes serpentinite soils within closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland and vernal pools.	**Low.** Suitable habitat for this perennial bulbiferous herb is not present within the project site.
Round-leaved filaree *California macrophylla*	CRPR 1B.1	Clay soils within cismontane woodland and valley and foothill grassland. 15-1200 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Dunn's mariposa lily *Calochortus dunnii*	SR, CRPR 1B.2	Rocky substrate within closed-cone coniferous forest, chaparral and valley and foothill grassland. 185-1,830 m elevation.	**Low.** Suitable habitat for this perennial bulbiferous herb is not present within the project site.
Lewis' evening primrose *Camissoniopsis lewisii*	CRPR 3	Sandy or clay soils within coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub and valley and foothill grassland. 0-300 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Payson's jewelflower *Caulanthus simulans*	CRPR 4.2	Sandy or granitic substrate within chaparral and coastal scrub. 90-2,200 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Wart-stemmed ceanothus *Ceanothus verrucosus*	CRPR 2B.2	Chaparral. 1-380 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Southern tarplant *Centromadia parryi* ssp. *australis*	CRPR 1B.1	Disturbed areas along the margins of marshes and swamps and within chaparral, coastal scrub, valley and foothill grassland and vernal pools. 0-480 m elevation.	**Moderate.** Chaparral and scrub habitat is present less than one mile from the project site and this species is known to occur in disturbed areas. This species may occur in the ruderal vegetation within the project site.
Smooth tarplant *Centromadia pungens* ssp. *laevis*	CRPR 1B.1	Alkaline soils within chenopod scrub, meadows and seeps, playas, riparian woodland and valley and foothill grassland. 0-640 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Orcutt's pincushion *Chaenactis glabriuscula* var. *orcuttiana*	CRPR 1B.1	Coastal bluff scrub and coastal dunes. 0-100 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Southern mountain misery *Chamaebatia australis*	CRPR 4.2	Gabbroic or metavolcanic chaparral. 300-1020 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present and the project site is located outside of the elevation range for the species.
Peninsular spineflower *Chorizanthe leptotheca*	CRPR 4.2	Granitic substrate in alluvial fans within chaparral, coastal scrub and lower montane coniferous forest. 300-1,900 m elevations.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Orcutt's spineflower *Chorizanthe orcuttiana*	FE, SE, CRPR 1B.1	Sandy openings within closed-cone coniferous forest, chaparral and coastal scrub. 3-125 m elevations.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Delicate clarkia *Clarkia delicata*	CRPR 1B.2	Gabbroic substrate within chaparral and cismontane woodland. 235-1,000 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Summer holly *Comarostaphylis diversifolia* ssp. *diversifolia*	CRPR 1B.2	Chaparral and cismontane woodland. 30-790 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present within the project site.
Small-flowered morning-glory *Convolvulus simulans*	CRPR 4.2	Clay soils within serpeninite seeps, coastal scrub and valley and foothill grassland. 3-115 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
San Diego sand aster *Corethrogyne filaginifolia* var. *incana*	CRPR 1B.1	Coastal bluff scrub, chaparral and coastal scrub.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Del Mar sand aster *Corethrogyne filaginifolia* var. *linifolia*	CRPR 1B.1	Sandy substrate within coastal bluff scrub, chaparral and coastal scrub. 15-150 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Paniculate tarplant *Deinandra paniculata*	CRPR 4.2	Usually sandy substrate within coastal scrub, valley and foothill grassland and vernal pools. 25-940 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Cuyamaca larkspur *Delphinium hesperium* ssp. *cuyamacae*	SR, CRPR 1B.2	Mesic areas within lower montane coniferous forest, meadows and seeps and vernal pools. 1,220-1,631 m elevations.	**Low.** Suitable habitat for this perennial herb is not present and the project site is located outside of the elevation range for the species.
Western dichondra *Dichondra occidentalis*	CRPR 4.2	Chaparral, cismontane woodland, coastal scrub and valley and foothill grassland. 50-500 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present within the project site.
Banner dudleya *Dudleya alainae*	CRPR 3.2	Rocky substrate within chaparral, lower montane coniferous forest and Sonoran desert scrub. 740-1,200 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present and the project site is located outside of the elevation range for the species.
Variegated dudleya *Dudleya variegata*	CRPR 1B.1	Clay soils within chaparral, cismontane woodland, coastal scrub, valley and foothill grassland and vernal pools. 3-580 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Sticky dudleya *Dudleya viscida*	CRPR 1B.2	Rocky substrate within coastal bluff scrub, chaparral, cismontane woodland and coastal scrub. 10-550 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Palmer's goldenbush *Ericameria palmeri* var. *palmeri*	CRPR 1B.1	Mesic areas within chaparral and coastal scrub. 30-600 m elevations.	**Low.** Suitable habitat for this perennial evergreen shrub is not present within the project site.
San Diego button-celery Eryngium aristulatum *var.* parishii	FE, SE, CRPR 1B.1	Mesic areas within coastal scrub, valley and foothill grassland and vernal pools. 20-620 m elevations.	**Low.** Suitable habitat for this annual/perennial herb is not present within the project site.
San Diego barrel cactus *Ferocactus viridescens*	CRPR 2B.1	Chaparral, coastal scrub, valley and foothill grassland and vernal pools. 3-450 m elevations.	**Low.** Suitable habitat for this perennial stem succulent is not present within the project site.
Palmer's grapplinghook *Harpagonella palmeri*	CRPR 4.2	Clay soils in grassy openings within chaparral, coastal scrub and valley and foothill grassland. 20-955 m elevation.	**Low.** Suitable habitat for this perennial stem succulent is not present within the project site.
Orcutt's hazardia *Hazardia orcuttii*	FC, ST, CRPR 1B.1	Clay soils within chaparral coastal scrub. 80-85 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present and the project site is located outside of the elevation range for the species.
Beach goldenaster *Heterotheca sessiliflora* ssp. *sessiliflora*	CRPR 1B.1	Chaparral, coastal dunes and coastal scrub. 0-1,225 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Graceful tarplant *Holocarpha virgata* ssp. *elongata*	CRPR 4.2	Chaparral, cismontane woodland, coastal scrub and valley and foothill grassland. 60-1,100 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Vernal barley *Hordeum intercedens*	CRPR 3.2	Coastal dunes, coastal scrub, valley and foothill grassland and vernal pools. 5-1,000 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Mesa horkelia *Horkelia cuneata* ssp. *puberula*	CRPR 1B.1	Sandy or gravelly substrate within chaparral, cismontane woodland and coastal scrub. 70-810 m elevations.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Ramona horkelia *Horkelia truncata*	CRPR 1B.3	Clay or gabbroic substrate within chaparral and cismontane woodland. 400-1,300 m elevations.	**Low.** Suitable habitat for this perennial herb is not present and the project site is located outside of the elevation range for the species.

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
San Diego sunflower *Hulsea californica*	CRPR 1B.3	Openings and burned areas within chaparral, lower montane coniferous forest, upper montane coniferous forest. 915-2,915 m elevations.	**Low.** Suitable habitat for this perennial herb is not present and the project site is located outside of the elevation range for the species.
Decumbent goldenbush *Isocoma menziesii* var. *decumbens*	CRPR 1B.2	Often disturbed areas within chaparral and coastal scrub. 10-135 m elevation.	**Low.** Suitable habitat for this perennial shrub/subshrub is not present within the project site.
San Diego marsh-elder *Iva hayesiana*	CRPR 2B.2	Marshes and swamps and playas. 10-500 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Southwestern spiny rush *Juncus acutus* var. *leopoldii*	CRPR 4.2	Coastal dunes, alkaline meadows and seeps, and coastal marshes and swamps. 3-900 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present within the project site.
Heart-leaved pitcher sage *Lepechinia cardiophylla*	CRPR 1B.2	Closed-cone coniferous forest, chaparral and cismontane woodland. 520-1,370 m elevation.	**Low.** Suitable habitat for this perennial shrub is not present within the project site.
Robinson's pepper-grass *Lepidium virginicum* var. *robinsonii*	CRPR 4.3	Chaparral and coastal scrub. 1-885 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Large-flowered leptosiphon *Leptosiphon grandiflorus*	CRPR 4.2	Usually sandy substrate within coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub and valley and foothill grassland. 5-1,220 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Sea dahlia *Leptosyne maritima*	CRPR 2B.2	Coastal bluff scrub and coastal scrub. 5-150 m elevations.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Lemon lily *Lilium parryi*	CRPR 1B.2	Mesic areas within lower montane coniferous forest, meadows and seeps, riparian forest and upper montane coniferous forest. 1,220-2,745 m elevation.	**Low.** Suitable habitat for this perennial bulbiferous herb is not present and the project site is located outside of the elevation range for the species.

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Orcutt's linanthus *Linanthus orcuttii*	CRPR 1B.3	Openings within chaparral, lower montane coniferous forest and pinyon and juniper woodland. 915-2,145 m elevation.	**Low.** Suitable habitat for this annual herb is not present and the project site is located outside of the elevation range for the species.
Small-flowered microseris *Microseris douglasii* ssp. *platycarpha*	CRPR 4.2	Clay soils within cismontane woodland, coastal scrub, valley and foothill grassland and vernal pools. 15-1,070 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Cleveland's bush monkeyflower *Mimulus clevelandii*	CRPR 4.2	Gabbroic and rocky soils in disturbed areas within chaparral, cismontane woodland and lower montane coniferous forest. 450-2,000 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present and the project site is located outside of the elevation range for the species.
Palomar monkeyflower *Mimulus diffusus*	CRPR 4.3	Sandy or gravelly substrate within chaparral or lower montane coniferous forest. 1,220-1,830 m elevation.	**Low.** Suitable habitat for this annual herb is not present and the project site is located outside of the elevation range for the species.
Intermediate monardella *Monardella hypoleuca* ssp. *intermedia*	CRPR 1B.3	Chaparral, cismontane woodland and lower montane and coniferous forest. 400-1,250 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present and the project site is located outside of the elevation range for the species.
Felt-leaved monardella *Monardella hypoleuca* ssp. *lanata*	CRPR 1B.2	Chaparral and cismontane woodland. 300-1,575 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present and the project site is located outside of the elevation range for the species.
Hall's monardella *Monardella macrantha* ssp. *hallii*	CRPR 1B.3	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest and valley and foothill grassland. 730-2,195 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present and the project site is located outside of the elevation range for the species.
San Felipe monardella *Monardella nana* ssp. *leptosiphon*	CRPR 1B.2	Chaparral and lower montane coniferous forest. 1,200-1,855 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present and the project site is located outside of the elevation range for the species.
Willowy monardella *Monardella viminea*	FE, SE, CRPR 1B.1	Coastal rocky drainages, just outside o the streambed on the sandy bench. < 400 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Little mousetail *Myosurus minimus* ssp. *apus*	CRPR 3.1	Valley and foothill grassland and vernal pools. 20-640 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Spreading navarretia *Navarretia fossalis*	FT, CRPR 1B.1	Chenopod scrub, marshes and swamps, playas and vernal pools. 30-655 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Chaparral nolina *Nolina cismontana*	CRPR 1B.2	Sandstone or gabbro substrate within chaparral or coastal scrub. 140-1,275 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present within the project site.
California's adder's-tongue *Ophioglossum californicum*	CRPR 4.2	Mesic areas within chaparral, valley and foothill grassland and vernal pools. 60-525 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present within the project site.
Golden-rayed pentachaeta *Pentachaeta aurea* ssp. *aurea*	CRPR 4.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland and. 80-1,850 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
South coast branching phacelia *Phacelia ramosissima* var. *austrolitoralis*	CRPR 3.2	Sandy, sometimes rocky substrate within chaparral, coastal dunes, coastal scrub and marshes and swamps. 5-300 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Fish's milkwort *Polygala cornuta* var. *fishiae*	CRPR 4.3	Chaparral, cismontane woodland and riparian woodland. 100-1,000 m elevation.	**Low.** Suitable habitat for this perennial deciduous shrub is not present within the project site.
Delta woolly-marbles *Psilocarphus brevissimus* var. *multiflorus*	CRPR 4.2	Vernal pools. 10-500 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Nuttall's scrub oak *Quercus dumosa*	CRPR 1B.1	Sandy and clay loam soils within closed-cone coniferous forest, chaparral and coastal scrub. 15-400 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present within the project site.
Engelmann oak *Quercus engelmannii*	CRPR 4.2	Chaparral, cismontane woodland, riparian woodland and valley and foothill grassland. 50-1,300 m elevation.	**Low.** Suitable habitat for this perennial deciduous tree is not present within the project site.
Caraway-leaved woodland gilia *Saltugilia caruifolia*	CRPR 4.3	Sandy substrate within chaparral and lower montane coniferous forest. 840-2,300 m elevation.	**Low.** Suitable habitat for this annual herb is not present and the project site is located outside of the elevation range for the species.

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Species	Status[1]	Habitat	Potential for Occurrence[2]
Southern mountains skullcap *Scutellaria bolanderi* ssp. *austromontana*	CRPR 1B.2	Mesic areas within chaparral, cismontane woodland and lower montane coniferous forest. 425-2,000 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present and the project site is located outside of the elevation range for the species.
Purple stemodia *Stemodia durantifolia*	CRPR 2B.1	Sonoran desert scrub. 180-300 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
San Bernardino aster *Symphyotrichum defoliatum*	CRPR 1B.2	Near ditches, stream and springs within cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps and valley and foothill grassland. 2-2,040 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present within the project site.
Parry's tetracoccus *Tetracoccus dioicus*	CRPR 1B.2	Chaparral and costal scrub. 165-1,000 m elevation.	**Low.** Suitable habitat for this perennial deciduous shrub is not present within the project site.
San Diego County viguiera *Viguiera laciniata*	CRPR 4.2	Chaparral and coastal scrub. 60-750 m elevation.	**Low.** Suitable habitat for this perennial shrub is not present within the project site.
Golden violet *Viola purpurea* ssp. *aurea*	CRPR 2B.2	Sandy substrate within Great Basin scrub and pinyon and juniper woodland. 1,000-2,500 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Rush-like bristleweed *Xanthisma junceum*	CRPR 4.3	Chaparral and coastal scrub. 240-1,000 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
WILDLIFE			
Invertebrates			
San Diego fairy shrimp *Branchinecta sandiegoensis*	FE	Vernal pools within chaparral and coastal scrub.	**Low.** Suitable habitat for this species is not present within the project site.

TABLE 1
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Species	Status[1]	Habitat	Potential for Occurrence[2]
Monarch butterfly *Danaus plexippus*		Generally closed-cone coniferous forest; however, this species is known to roost in many different species of ornamental trees, most notably *Eucalyptus* spp.	**Low.** While the western population of this species has been known to overwinter in coastal sites along central and southern California, it requires specific microclimactic conditions to survive the winter and prefers groves of trees, rather than the sparse tree cover found on the project site. It has a low potential of occurring as a transient.
Laguna Mountains skipper *Pyrgus ruralis* ssp. *lagunae*	FE	Subalpine coniferous forest.	**Low.** Suitable habitat for this species is not present within the project site.
Riverside fairy shrimp *Streptocephalus woottoni*	FE	Coastal scrub, valley and foothill grassland and wetlands.	**Low.** Suitable habitat for this species is not present within the project site.
California brackishwater snail *Tryonia imitator*		Generally associated coastal marshes.	**Low.** Suitable habitat for this species is not present within the project site.
Fish			
Arroyo chub *Gila orcuttii*	SSC	South coast flowing waters.	**Low.** Suitable habitat for this species is not present within the project site.
Reptiles and Amphibians			
Arroyo toad *Anaxyrus californicus*	FE, SSC	Sandy substrate within desert wash, riparian scrub or riparian woodland associated with south coast slow-moving and pooling waters.	**Low.** Suitable habitat for this species is not present within the project site.
Orangethroat whiptail *Aspidoscelis hyperythra*	SSC	Chaparral, cismontane woodland and coastal scrub.	**Low.** Suitable habitat for this species is not present within the project site.
Coastal whiptail *Aspidoscelis tigris* ssp. *stejnegeri*		Generally found within chaparral, cismontane woodland and coastal scrub; however, this species can be found in heavily disturbed areas within the general vicinity of intact habitat.	**Low.** While this species has been recorded in the vicinity of the project site and has been known to occupy disturbed areas, the bounding of the site by urban development and, particularly, the surrounding relatively busy roads, greatly reduces the likelihood that it would cross over from adjacent habitats to utilize the site.

TABLE 1
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Species	Status[1]	Habitat	Potential for Occurrence[2]
Rosy boa *Charina trivirgata*		Desert and chaparral from the coast to the Mojave and Colorado Deserts. Prefers moderate to dense vegetation and rocky cover.	**Low.** Suitable habitat for this species is not present within the project site.
Red-diamond rattlesnake *Crotalus ruber*	SSC	Chaparral, Mojavean desert scrub and Sonoran desert scrub.	**Low.** Suitable habitat for this species is not present within the project site.
Western pond turtle *Emys marmorata*	SSC	Riparian scrub or riparian woodland associated with perennial flowing water sources.	**Low.** Suitable habitat for this species is not present within the project site.
Large-blotched salamander *Ensatina klauberi*	SSC	Mesic areas within a variety of forest, woodland scrub and chaparral communities.	**Low.** Suitable habitat for this species is not present within the project site.
Coast horned lizard *Phrynosoma blainvillii*	SSC	A variety of dry and mesic habitats generally associated with chaparral and coastal scrub communities.	**Low.** Suitable habitat for this species is not present within the project site.
Coronado island skink *Plestiodon skiltonianus* ssp. *interparietalis*	SSC	Chaparral, cismontane woodland and pinyon and juniper woodland.	**Low.** Suitable habitat for this species is not present within the project site.
Southern mountain yellow-legged frog *Rana muscosa*	FE, SE, SSC	Riparian scrub or riparian woodland associated with perennial flowing water sources.	**Low.** Suitable habitat for this species is not present within the project site.
Coast patch-nosed snake *Salvadora hexalepis* ssp. *virgultea*	SSC	Coastal scrub.	**Low.** Suitable habitat for this species is not present within the project site.
Two-striped garter snake *Thamnophis hammondii*	SSC	Riparian scrub or riparian woodland associated with perennial flowing water sources.	**Low.** Suitable habitat for this species is not present within the project site.

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Species	Status[1]	Habitat	Potential for Occurrence[2]
Birds			
Cooper's hawk *Accipiter cooperi*	WL	Open, uninterrupted or marginal woodland. Nests primarily in riparian deciduous trees and live oaks.	**Low. T**he trees present along the perimeter of the project site may be used temporarily for roosting and this species may forage on the site based on the apparent rodent population; however, it would only be expected to occur as a transient due to the surrounding urbanization and the availability of higher-quality habitat in the vicinity.
Tricolored blackbird *Agelaius tricolor*	BCC, SC, SSC	Cattail and bulrush thickets, open water.	**Low.** Suitable habitat for this species is not present within the project site.
Southern California rufous-crowned sparrow *Aimophila ruficeps* ssp. *canescens*	WL	Chaparral and coastal scrub.	**Low.** Suitable habitat for this species is not present within the project site.
Golden eagle *Aquila chrysaetos*	BEPA, SFP, WL	Rolling foothill mountain areas.	**Low.** Suitable habitat for this species is not present within the project site.
Bell's sage sparrow *Artemisiospiza belli* ssp. *belli*	BCC, WL	Chaparral and coastal scrub.	**Low.** Suitable habitat for this species is not present within the project site.
Burrowing owl *Athene cunicularia*	BCC, SSC	Flat, open, dry annual or perennial grasslands, deserts or scrublands. This species is known to occur in heavily disturbed areas.	**Low.** While this species is known to utilize disturbed sites, the small size of this parcel and surrounding urbanization reduce the likelihood that it would occupy the site on a permanent or semi-permanent basis. No sign of burrowing owl occupation was observed during the field reconnaissance survey.
Swainson's hawk *Buteo swainsoni*	BCC, ST	Great Basin grassland, riparian forest and woodland and valley and foothill grassland.	**Low.** Suitable habitat for this species is not present within the project site.
Coastal cactus wren *Campylorhynchus brunneicapillus* ssp. *sandiegensis*	BCC, SSC	Coastal scrub.	**Low.** Suitable habitat for this species is not present within the project site.
Western snowy plover *Charadrius alexandrinus nivosus*	FT, BCC, SSC	Sandy beaches, salt pond levees, and shores of large alkali lakes.	**Low**. Suitable habitat for this species is not present within the project site.

TABLE 1
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Species	Status[1]	Habitat	Potential for Occurrence[2]
Southwestern willow flycatcher *Empidonax traillii* ssp. *extimus*	FE, SE	Dense riparian forest, generally dominated by *Salix* spp.	**Low**. Suitable habitat for this species is not present within the project site.
Yellow-breasted chat *Icteria virens*	SSC	Riparian forest, scrub and woodland.	**Low**. Suitable habitat for this species is not present within the project site.
Least bittern *Ixobrychus exilis*	BCC, SSC	Wetlands.	**Low**. Suitable habitat for this species is not present within the project site.
California balck rail *Laterallus jamaicensis*	BCC, SFP	Wetlands.	**Low**. Suitable habitat for this species is not present within the project site.
Belding's savannah sparrow *Passerculus sandwichensis* ssp. *beldingi*	SE	Coastal salt marsh and coastal scrub.	**Low**. Suitable habitat for this species is not present within the project site.
White-faced ibis *Plegadis chihi*	WL	Marsh and swamp communities.	**Low**. Suitable habitat for this species is not present within the project site.
Coastal California gnatcatcher *Polioptila californica* ssp. *californica*	FT, SSC	Coastal bluff scrub and coastal scrub.	**Low**. Suitable habitat for this species is not present within the project site.
Light-footed clapper rail *Rallus longirostris* ssp. *levipes*	FE, SE, SFP	Generally associated coastal marshes.	**Low**. Suitable habitat for this species is not present within the project site.
Yellow warbler *Setophaga petechia*	BCC, SSC	Riparian forest, scrub and woodland.	**Low**. Suitable habitat for this species is not present within the project site.
Western spadefoot *Spea hammondii*	SSC	Cismontane woodland, coastal scrub, valley and foothill grassland and wetland communities.	**Low**. Suitable habitat for this species is not present within the project site.
California least tern *Sternula antillarum* ssp. *browni*	FE, SE, SFP	Alkali playas and wetlands; generally coastal.	**Low**. Suitable habitat for this species is not present within the project site.
Least Bell's vireo *Vireo bellii* ssp. *Pusillus*	FE, SE	Riparian forest, scrub and woodland.	**Low.** Suitable habitat for this species is not present within the project site.

TABLE 1
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Species	Status[1]	Habitat	Potential for Occurrence[2]
Mammals			
Pallid bat *Antrozous pallidus*	SSC, WBWG-H	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	**Low.** Suitable habitat for this species is not present within the project site.
Dulzura pocket mouse *Chaetodipus californicus* ssp. *femoralis*	SSC	Chaparral, coastal scrub, and valley and foothill grassland.	**Low.** Suitable habitat for this species is not present within the project site.
Northwestern San Diego pocket mouse *Chaetodipus fallax* ssp. *fallax*	SSC	Chaparral and coastal scrub.	**Low.** Suitable habitat for this species is not present within the project site.
Townsend's big-eared bat *Corynorhinus townsendii*	SSC, SC, WBWG-H	Roosting: caves, mine shafts or other open cavities. Foraging: woodlands, coastal scrub, grasslands and chaparral.	**Low.** Suitable habitat for this species is not present within the project site.
Stephens' kangaroo rat *Dipodomys stephensi*	FE, ST	Coastal scrub and valley and foothill grassland.	**Low.** Suitable habitat for this species is not present within the project site.
Western mastiff bat *Eumops perotis* ssp. *californicus*	SSC, WBWG-H	Chaparral, cismontane woodland, coastal scrub and valley and foothill grassland.	**Low.** Suitable habitat for this species is not present within the project site.
Silver-haired bat *Lasionycteris noctivagans*	WBWG-M	Lower montane coniferous and riparian forest.	**Low.** Suitable habitat for this species is not present within the project site.
Western red bat *Lasiurus blossevillii*	SSC, WBWG-H	Cismontane woodland, lower montane coniferous forest and riparian forest and woodland.	**Low.** Suitable habitat for this species is not present within the project site.
Hoary bat *Lasurius cinereus*	WBWG-M	Broadleaved upland forest, cismontane woodland, lower montane coniferous forest and north coast coniferous forest.	**Low.** Suitable habitat for this species is not present within the project site.
Western yellow bat *Lasiurus xanthinus*	SSC, WBWG-H	Desert wash.	**Low.** Suitable habitat for this species is not present within the project site.

TABLE 1
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Species	Status[1]	Habitat	Potential for Occurrence[2]
San Diego black-tailed jackrabbit *Lepus californicus* ssp. *bennettii*	SSC	Coastal scrub; however, this species is known to utilize heavily disturbed areas for foraging and roosting.	**Low.** Though this species is known to utilize disturbed areas, the lack of cover, small size of the parcel, and surrounding urban environment reduces the likelihood for this species to be present on the project site.
Western small-footed myotis *Myotis ciliolabrum*	WBWG-M	Riparian, scrub, and forest habitats near a source of water.	**Low.** Suitable habitat for this species is not present within the project site.
Long-eared myotis *Myotis evotis*	WBWG-M	Riparian, scrub, and forest habitats near a source of water.	**Low.** Suitable habitat for this species is not present within the project site.
Yuma myotis *Myotis yumanensis*	SSC, WBWG-LM	Riparian, scrub, and forest habitats near a source of water.	**Low.** Suitable habitat for this species is not present within the project site.
San Diego desert woodrat *Neotoma lepida* ssp. *intermedia*	SSC	Coastal scrub.	**Low.** Suitable habitat for this species is not present within the project site.
Pocketed free-tailed bat *Nyctinomops femerosaccus*	SSC, WBWG-M	Joshua tree woodland, pinyon and juniper woodland, riparian scrub and Sonoran desert scrub.	**Low.** Suitable habitat for this species is not present within the project site.
Big free-tailed bat *Nyctinomops macrotis*	SSC, WBWG-MH	A variety of scrub , forest and woodland communities.	**Low.** Suitable habitat for this species is not present within the project site.
Pacific pocket mouse *Perognathus longimembris* ssp. *pacificus*	SSC	Coastal scrub.	**Low.** Suitable habitat for this species is not present within the project site.
American badger *Taxidea taxus*	SSC	Grassland, open shrubland, forest or desert habitats with friable soils.	**Low.** Suitable habitat for this species is not present within the project site.

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]

Notes

Status Codes:
Federal: FE Federal Endangered; FT Federal Threatened; FC Federal Candidate (USFWS); BEPA Bald Eagle and Golden Eagle Protection Act (USFWS); BCC Birds of Conservation Concern (USFWS)
State: SE State Endangered , ST State Threatened, SR State Rare; SFP Fully protected (CDFW); SC State Candidate (CDFW); SSC California Species of Special Concern (CDFW); WL Watch List (CDFW)
California Rare Plant Rank (CRPR)
CRPR 1B Plants considered rare, threatened or endangered in California and elsewhere;
CRPR 2B Plants considered rare, threatened or endangered in California, more common elsewhere;
CRPR 3 Plants for which more information is needed, review list;
CRPR 4 Limited distribution, watch list.
CRPR Threat Ranks:
0.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat);
0.2 Fairly threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat);
0.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
Other: WBWG Western Bat Watch Group List (H, M, L: high, medium, low priority)

Special-Status Plants

As summarized in Table 1, of the 83 special-status plant species known to occur in the region, only San Diego ambrosia and southern tarplant have a moderate potential to occur on the Project site based on the suitability of the habitat and proximity to known historical records. These two species have been observed within one mile of the site and are known to occur in disturbed areas similar to those on the Project site. However, these species absence or presence can only be determined during the respective blooming season; Southern tarplant is from May-November and San Diego ambrosia is from April-November.

Special-Status Wildlife

As summarized in Table 1, there are 58 special-status wildlife species are known to occur in the region; however the conditions of the Project site are not suitable to support resident populations of any special-status species, because of the small size of the Project site and its proximity to urban development in all directions, including relatively busy roads, which would limit terrestrial wildlife species from utilizing the site. In addition, the site is frequently disturbed by weed control efforts and the low, non-native herbaceous vegetation present on the site offers little cover for many species.

3.7 Migratory Birds

Migratory birds are protected in accordance with the federal Migratory Bird Treaty Act (MBTA). According to the MBTA, taking, killing, or possessing migratory birds is unlawful as is taking of any parts, nests, or eggs of such birds (16 United States Code 703). Most migratory bird species are protected during the nesting season by the MBTA, as are the habitats in which they reside. As previously noted, several common species of bird may be present on the Project site and the trees around the perimeter of the site provide suitable nesting habitat for many species. Some birds nest on the ground such as mourning dove (*Zenaida macroura*) and killdeer (*Charadrius vociferus*); therefore, much of the site has potential for supporting bird nests, which includes disturbed areas dominated by non-native grasses.

3.8 Jurisdictional Resources

No jurisdictional resources occur on or adjacent to the Project site. Moreover, the parcel is flat and without drainage features, and is surrounded by development with no connectivity to jurisdictional resources in the region.

3.9 Wildlife Corridors

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. A wildlife corridor study was not conducted as part of the proposed project since extensive, long-term studies of species ecology, movement patterns, and dispersal behavior would be required to conclusively demonstrate if a particular site or feature of a site served as an important movement corridor.

The Project site is not situated in an area that connects large open spaces, nor is it in a known wildlife movement area. Moreover, the surrounding urban development limited the availability for wildlife to migrate locally or regional to natural habitats needed for foraging, breeding and dispersal. Terrestrial wildlife would be expected to utilize the large undeveloped areas to the north and east of the site, instead of the Project site, since the Project site provides poor vegetation cover compared to these nearby open spaces.

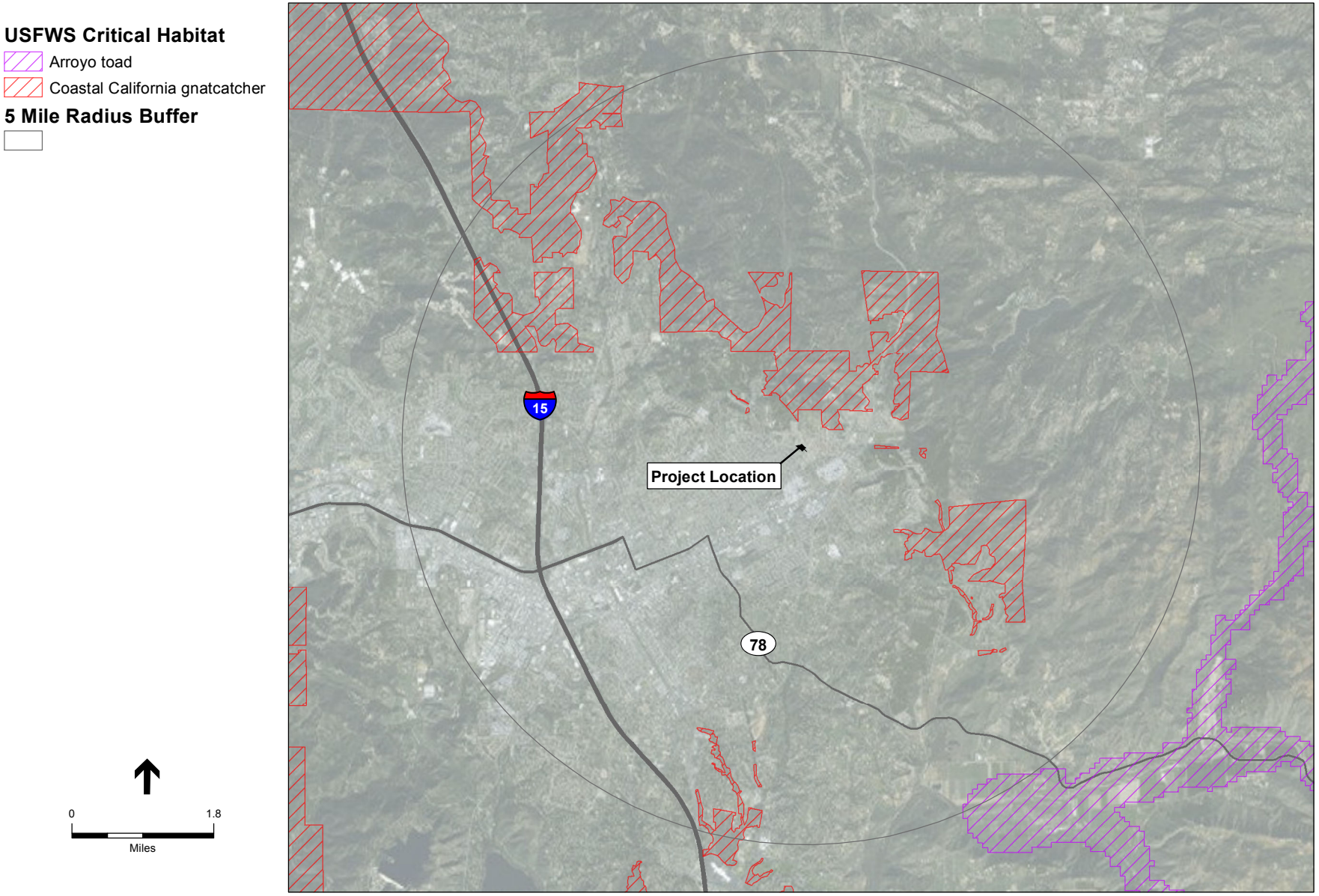
3.10 Critical Habitat

There is no USFWS Critical Habitat present on or immediately adjacent to the Project site; however, the nearest Critical Habitat is situated 0.3 miles to the north. USFWS has designated the hills surrounding Dixon Lake as Critical Habitat for the coastal California gnatcatcher, listed as federally threatened and a state Species of Special Concern. These hills are characterized by coastal sage scrub, which is the preferred habitat for this species. **Figure 4** depicts the designated Critical Habitat win the vicinity of the Project site.

3.11 Protected Trees

Section 33-1066, -1068, and -1069 of Article 55 (Grading and Erosion Control) of the City of Escondido Zoning Code regulates impacts to historically significant and/or mature trees, with a focus on oak tree protection. Protected trees are defined as "any oak (*Quercus* sp.) which has a ten (10) inch or greater trunk diameter at breast height (DBH), or any other species or individual specimen listed on the historic register, or determined to substantially contribute to the historic character of a property or structure listed on the local historic register, pursuant to Article 40 of the Escondido Zoning Code (2001)."

There are eight oak trees located along the southwestern Project boundary. Of the eight trees along this fence line, at least three are protected in accordance with Article 55 of the City's Zoning Code based on their size.



SOURCE: ESRI, USFWS

Escondido MFRO Facility Project . 140480.02

Figure 4

Critical Habitat Map

4. Impacts

Construction of the proposed Project could impact plants and wildlife in a variety of ways. Impacts may be direct, such as through mortality due to being struck by construction equipment, burrow collapses, and habitat alteration/removal. Indirect impacts are caused by a project, but occur at a different time or place. Examples of this include fugitive dust or excessive noise affecting adjacent habitat. Construction activities could result in direct mortality or displacement of wildlife through habitat loss and could directly impact special-status species. Under the stipulations of CEQA, potential impacts to biological resources could be considered significant if actions associated with the Project would:

a) Have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies or regulations, or by the CDFW or USFWS.

b) Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, polices, regulations, or by the CDFW or USFWS.

c) Have a substantial adverse impact on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

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

e) Conflict with any local policies/ordinance that protect biological resources, such as a tree preservation policy or ordinance.

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

4.1 Habitat

Project construction activities will occur entirely on previously disturbed areas and will not impact native plant communities. Based on the existing habitat, the urban surroundings, and periodic landscape maintenance activities (i.e., weed abatement), the site's value as habitat for most sensitive plants and wildlife is greatly reduced. In addition, there are large areas of open space in the region that function as high-quality habitat. Therefore, Project impacts to habitat would be less than significant and would not require mitigation.

4.2 Nesting Birds

Direct mortality of avian species would not likely occur during construction of the Project; however, there is suitable nesting habitat present on the property. Depending on the timing of construction, nesting may be occurring and Project activities have the potential to disrupt nesting activity, including causing the abandonment of nests and/or direct impacts to eggs and nestlings of bird species with small, well-hidden nests, which would violate the MTBA and Fish and Game

Code. Impacts to nesting birds would result primarily through direct and indirect disturbances such as through habitat clearing, tree and earth removal, grading, digging, and equipment movement. Project activities are not expected to result in a substantial loss of sensitive habitat that would affect the ability of species to disperse and persist throughout the surrounding habitats and wider region. Implementation of the mitigation measures recommended in **Section 5.1** would reduce the potential for injury or mortality of nesting birds during construction through construction timing, preconstruction nesting bird surveys, establishment of nesting buffers, and worker environmental training.

Potential Significance: Disturbances to nesting birds during construction activities could produce direct and indirect impacts. These impacts would be reduced to levels less than significant with implementation of the mitigation measures outlined in **Mitigation Measure 5.1**, Nesting Birds.

4.3 Special-Status Plant and Wildlife Species

As discussed in Section 3, the potential for the site to support special-status plant and wildlife species is low due to its location, size, level of disturbance, and low quality habitat. No special status plant species were found within the Project site during the habitat assessment, though focused surveys for special-status plants were not conducted. There is a moderate possibility for two species of special-status plants adapted to higher levels of disturbance to occur on site: San Diego ambrosia and southern tarplant. However, these species absence or presence can only be determined during the blooming season of May – August. Direct loss of individuals of these species may occur through grading, digging, and equipment movement; however, implementation of the mitigation measures recommended in Section 5.1 would reduce the potential of direct impacts to sensitive plants through preconstruction special-status plant surveys and salvaging and relocation of individuals.

Potential Significance: Preparation of the Project site could result in direct impacts to two special-status plant species. Impacts would be reduced to levels less than significant with implementation of the mitigation measures outlined in **Mitigation Measure 5.2**, Special-Status Plants.

4.4 Protected Trees

All trees throughout the site will be removed to prepare the site for construction. At least three coast live oak trees protected in accordance with Article 55 of the City's Zoning Code are present along the southwestern boundary of the Project site and their direct loss would conflict with the City's tree protection ordinance. This is an unavoidable Project impact; however, implementation of the recommended mitigation measures described in Section 5.1 would reduce the level of significance of these impacts.

Potential Significance: A comprehensive tree survey was not conducted to determine the number of oak trees on the Project site that would qualify for protection under Article 55 of the City's Zoning Code. The preliminary biological assessment indicates that at least three trees would qualify and their loss will be considered a significant impact. The level of significance of these

impacts would be reduced with the implementation of the mitigation measures outlined in **Mitigation Measure 5.3**, Protected Trees.

5 Recommended Mitigation Measures

5.1 Nesting Birds

- Proposed Project activities (including, but not limited to, staging and disturbances to native and non-native vegetation, structures, and substrates) should occur outside of the avian breeding season, which generally runs from March 1st - August 15th, to avoid take of birds or their eggs.

- If avoidance of the avian breeding season is not feasible a qualified biologist with experience in conducting breeding bird surveys will conduct a preconstruction clearance survey for active nests no more than 3 days prior to the initiation of Project activities.

- If a protected native bird is found, flagging, stakes, and/or construction fencing will be used to demarcate a buffer zone of 300 feet (or 500 feet for raptors) between the Project activities and the nest. Project personnel, including all contractors working on site, will be instructed on the sensitivity of the area. The Project proponent will delay all Project activities within the 300- (or 500-) foot buffer area until August 15th or until a qualified biologist has determined that the juveniles have fledged, the nest is vacated, and there is no evidence of a second attempt at nesting.

  If the biological monitor determines that a narrower buffer between the Project activities and observed active nests is warranted, he/she will submit a written explanation as to why (e.g., species-specific information; ambient conditions and birds' habituation to them; and the terrain, vegetation, and birds' lines of sight between the Project activities and the nest and foraging areas) to the City. Based on the submitted information the City will determine whether to allow a narrower buffer.

- The biological monitor will be present on site during all grubbing and clearing of vegetation to ensure that these activities remain within the Project footprint (i.e., outside the demarcated buffer) and that the flagging/stakes/fencing is being maintained, and to minimize the likelihood that active nests are abandoned or fail due to Project activities. The biological monitor will send weekly monitoring reports to the City during the grubbing and clearing of vegetation, and will notify the City immediately if Project activities damage active avian nests.

5.2 Special-Status Plants

- A qualified biologist will perform focused surveys during the appropriate time of year to detect the presence of sensitive plant species (i.e., San Diego ambrosia and southern tarplant).

- If sensitive plants are observed on the Project site, flagging, stakes, and/or construction fencing will be used to demarcate the areas in which the plants are growing and these areas will be avoided, where feasible. Project personnel, including all contractors working on site, will be instructed on the sensitivity of the area.

- If preservation on-site is not feasible, the Project biologist will consult with CDFW to determine appropriate mitigation for the loss of any special-status plants.

5.3 Protected Trees

- Prior to construction, a qualified biologist will conduct a tree survey to identify protected oak trees on the Project site. The biologist will document qualifying data for each oak tree on the site, including location, height, diameter of dripline, number and size of trunks, and health characteristics.

- The Project biologist will obtain a vegetation removal permit as required by Sec. 33-1068.B of the City's Zoning Code.

- If feasible, the affected oak trees may be salvaged and relocated to a location to be determined through consultation with the City. Per Sec. 33-1068.C of the City's Zoning Code, at the City's request, the applicant may "prepare[] a tree replacement… plan as well as a report by a professional which estimates the health of and the significance of the impacts to the tree(s) to be… removed or relocated, and includes specifications for transplanting and maintenance of the affected tree(s). The report shall also include feasible mitigation measures to reduce potential impacts to the tree(s). The professional may also be required to supervise the relocation of any tree(s)." Transplanted oak trees will be monitored and maintained to ensure the success of the relocation effort.

- The Project biologist shall consult with the City to determine appropriate mitigation for the loss of protected trees. According to Sec. 33-1069 of the City's Zoning Code, "Protected trees shall be replaced at a minimum 2:1 ratio," though "The number, size and species of replacement trees shall be determined on a case-by-case basis by the director, based on the specific circumstances of each request, the characteristics and condition (size, age and location) of the individual trees involved, and any professional report." Replacement oak trees will be monitored and maintained to ensure the success of the mitigation effort.

6. References

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ATTACHMENT A

California Natural Diversity Data Base (CNDDB)

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE **RareFind**

Query Summary:
Quad IS (Valley Center (3311721) OR Bonsall (3311732) OR Pala (3311731) OR Boucher Hill (3311638) OR Rodriquez Mtn. (3311628) OR San Pasqual (3311618) OR Escondido (3311711) OR Rancho Santa Fe (3311712) OR San Marcos (3311722))

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Acanthomintha ilicifolia	San Diego thorn-mint	Dicots	PDLAM01010	82	19	Threatened	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral | Coastal scrub | Valley & foothill grassland | Vernal pool | Wetland
Accipiter cooperii	Cooper's hawk	Birds	ABNKC12040	103	4	None	None	G5	S4	null	CDFW_WL-Watch List | IUCN_LC-Least Concern	Cismontane woodland | Riparian forest | Riparian woodland | Upper montane coniferous forest
Adolphia californica	California adolphia	Dicots	PDRHA01010	124	33	None	None	G3	S2	2B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral | Coastal scrub | Valley & foothill grassland
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	431	1	None	Endangered	G2G3	S1S2	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_EN-Endangered | NABCI_RWL-Red Watch List | USFWS_BCC-Birds of Conservation Concern	Freshwater marsh | Marsh & swamp | Swamp | Wetland
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	Birds	ABPBX91091	185	36	None	None	G5T3	S2S3	null	CDFW_WL-Watch List	Chaparral | Coastal scrub
Ambrosia pumila	San Diego ambrosia	Dicots	PDAST0C0M0	56	8	Endangered	None	G1	S1	1B.1	null	Chaparral | Coastal scrub | Valley & foothill grassland
Anaxyrus californicus	arroyo toad	Amphibians	AAABB01230	134	15	Endangered	None	G2G3	S2S3	null	CDFW_SSC-Species of Special Concern | IUCN_EN-Endangered	Desert wash | Riparian scrub | Riparian woodland | South coast flowing waters | South coast standing waters
Antrozous pallidus	pallid bat	Mammals	AMACC10010	402	4	None	None	G5	S3	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Chaparral | Coastal scrub | Desert wash | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Riparian woodland | Sonoran desert scrub | Upper montane coniferous forest | Valley & foothill grassland
Aquila chrysaetos	golden eagle	Birds	ABNKC22010	308	5	None	None	G5	S3	null	BLM_S-Sensitive | CDF_S-Sensitive | CDFW_FP-Fully Protected | CDFW_WL-Watch List | IUCN_LC-Least Concern | USFWS_BCC-Birds of	Broadleaved upland forest | Cismontane woodland | Coastal prairie | Great Basin grassland | Great Basin scrub | Lower

											Conservation Concern	montane coniferous forest | Pinon & juniper woodlands | Upper montane coniferous forest | Valley & foothill grassland
Arctostaphylos glandulosa ssp. crassifolia	Del Mar manzanita	Dicots	PDERI040E8	56	16	Endangered	None	G5T2	S2	1B.1	null	Chaparral | Closed-cone coniferous forest
Arctostaphylos rainbowensis	Rainbow manzanita	Dicots	PDERI042T0	63	4	None	None	G2	S2	1B.1	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Ultramafic
Artemisia palmeri	San Diego sagewort	Dicots	PDAST0S160	36	9	None	None	G3G4	S3?	4.2	null	Chaparral | Coastal scrub | Riparian forest | Riparian scrub | Riparian woodland
Artemisiospiza belli belli	Bell's sage sparrow	Birds	ABPBX97021	57	5	None	None	G5T2T4	S2?	null	CDFW_WL-Watch List | USFWS_BCC-Birds of Conservation Concern	Chaparral | Coastal scrub
Aspidoscelis hyperythra	orangethroat whiptail	Reptiles	ARACJ02060	346	38	None	None	G5	S2	null	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Chaparral | Cismontane woodland | Coastal scrub
Aspidoscelis tigris stejnegeri	coastal whiptail	Reptiles	ARACJ02143	113	15	None	None	G5T3T4	S2S3	null	null	null
Astragalus oocarpus	San Diego milk-vetch	Dicots	PDFAB0F6B0	41	2	None	None	G3	S3	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Cismontane woodland
Athene cunicularia	burrowing owl	Birds	ABNSB10010	1862	2	None	None	G4	S3	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Coastal prairie | Coastal scrub | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley & foothill grassland
Atriplex coulteri	Coulter's saltbush	Dicots	PDCHE040E0	75	3	None	None	G2	S2	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Coastal bluff scrub | Coastal dunes | Coastal scrub | Valley & foothill grassland
Atriplex pacifica	south coast saltscale	Dicots	PDCHE041C0	77	1	None	None	G3G4	S2	1B.2	null	Chenopod scrub | Coastal bluff scrub | Coastal scrub
Atriplex parishii	Parish's brittlescale	Dicots	PDCHE041D0	16	2	None	None	G1G2	S1	1B.1	USFS_S-Sensitive	Alkali playa | Chenopod scrub | Meadow & seep | Vernal pool | Wetland
Baccharis vanessae	Encinitas baccharis	Dicots	PDAST0W0P0	25	11	Threatened	Endangered	G1	S1	1B.1	null	Chaparral
Berberis nevinii	Nevin's barberry	Dicots	PDBER060A0	31	1	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden | SB_SBBG-Santa Barbara Botanic Garden	Chaparral | Cismontane woodland | Coastal scrub | Riparian scrub
Bloomeria clevelandii	San Diego goldenstar	Monocots	PMLIL1H010	115	8	None	None	G2	S2	1B.1	BLM_S-Sensitive	Chaparral | Coastal scrub | Valley & foothill grassland | Vernal pool | Wetland
Branchinecta sandiegonensis	San Diego fairy shrimp	Crustaceans	ICBRA03060	106	9	Endangered	None	G2	S2	null	IUCN_EN-Endangered	Chaparral | Coastal scrub | Vernal pool | Wetland
Brodiaea filifolia	thread-leaved brodiaea	Monocots	PMLIL0C050	130	22	Threatened	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland |

												Vernal pool | Wetland
Brodiaea orcuttii	Orcutt's brodiaea	Monocots	PMLIL0C0B0	119	29	None	None	G2	S2	1B.1	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Cismontane woodland | Closed-cone coniferous forest | Meadow & seep | Ultramafic | Valley & foothill grassland | Vernal pool | Wetland
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2394	7	None	Threatened	G5	S3	null	BLM_S-Sensitive | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Great Basin grassland | Riparian forest | Riparian woodland | Valley & foothill grassland
California macrophylla	round-leaved filaree	Dicots	PDGER01070	162	1	None	None	G2	S2	1B.1	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden | SB_SBBG-Santa Barbara Botanic Garden	Cismontane woodland | Valley & foothill grassland
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	Birds	ABPBG02095	150	31	None	None	G5T3Q	S3	null	CDFW_SSC-Species of Special Concern | USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	Coastal scrub
Caulanthus simulans	Payson's jewelflower	Dicots	PDBRA0M0H0	31	1	None	None	G4	S4	4.2	USFS_S-Sensitive	Chaparral | Coastal scrub
Ceanothus verrucosus	wart-stemmed ceanothus	Dicots	PDRHA041J0	67	23	None	None	G3	S2	2B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral
Centromadia parryi ssp. australis	southern tarplant	Dicots	PDAST4R0P4	78	11	None	None	G3T2	S2	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Marsh & swamp | Salt marsh | Valley & foothill grassland | Wetland
Centromadia pungens ssp. laevis	smooth tarplant	Dicots	PDAST4R0R4	104	2	None	None	G3G4T2	S2	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Alkali playa | Chenopod scrub | Meadow & seep | Riparian woodland | Valley & foothill grassland | Wetland
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	Dicots	PDAST20095	23	1	None	None	G5T1	S1	1B.1	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden	Coastal bluff scrub | Coastal dunes
Chaetodipus californicus femoralis	Dulzura pocket mouse	Mammals	AMAFD05021	54	8	None	None	G5T3	S3	null	CDFW_SSC-Species of Special Concern	Chaparral | Coastal scrub | Valley & foothill grassland
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	Mammals	AMAFD05031	94	9	None	None	G5T3T4	S3S4	null	CDFW_SSC-Species of Special Concern	Chaparral | Coastal scrub
Charadrius alexandrinus nivosus	western snowy plover	Birds	ABNNB03031	121	1	Threatened	None	G3T3	S2	null	CDFW_SSC-Species of Special Concern | NABCI_RWL-Red Watch List | USFWS_BCC-Birds of Conservation Concern	Great Basin standing waters | Sand shore | Wetland
Charina trivirgata	rosy boa	Reptiles	ARADA01020	48	6	None	None	G4G5	S3S4	null	IUCN_LC-Least Concern | USFS_S-Sensitive	Chaparral | Mojavean desert scrub | Sonoran desert scrub
Chorizanthe orcuttiana	Orcutt's spineflower	Dicots	PDPGN040G0	13	1	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral | Closed-cone coniferous forest | Coastal scrub
Clarkia delicata	delicate clarkia	Dicots	PDONA050D0	95	11	None	None	G3	S3	1B.2	BLM_S-Sensitive	Chaparral | Cismontane woodland | Ultramafic

Comarostaphylis diversifolia ssp. diversifolia	summer holly	Dicots	PDERI0B011	87	32	None	None	G3T2	S2	1B.2	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral | Cismontane woodland
Corethrogyne filaginifolia var. linifolia	Del Mar Mesa sand aster	Dicots	PDAST2M027	30	5	None	None	G4T1	S1	1B.1	null	Chaparral | Coastal bluff scrub | Coastal scrub
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	619	3	None	Candidate Threatened	G3G4	S2	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Broadleaved upland forest | Chaparral | Chenopod scrub | Great Basin grassland | Great Basin scrub | Joshua tree woodland | Lower montane coniferous forest | Meadow & seep | Mojavean desert scrub | Riparian forest | Riparian woodland | Sonoran desert scrub | Sonoran thorn woodland | Upper montane coniferous forest | Valley & foothill grassland
Crotalus ruber	red-diamond rattlesnake	Reptiles	ARADE02090	148	8	None	None	G4	S2?	null	CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	Chaparral | Mojavean desert scrub | Sonoran desert scrub
Danaus plexippus	monarch butterfly	Insects	IILEPP2010	334	1	None	None	G5	S3	null	USFS_S-Sensitive	Closed-cone coniferous forest
Delphinium hesperium ssp. cuyamacae	Cuyamaca larkspur	Dicots	PDRAN0B0U1	29	2	None	Rare	G4T2	S2	1B.2	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Lower montane coniferous forest | Meadow & seep | Vernal pool | Wetland
Dipodomys stephensi	Stephens' kangaroo rat	Mammals	AMAFD03100	214	9	Endangered	Threatened	G2	S2	null	IUCN_EN-Endangered	Coastal scrub | Valley & foothill grassland
Dudleya variegata	variegated dudleya	Dicots	PDCRA040R0	108	11	None	None	G2	S2	1B.2	BLM_S-Sensitive	Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland
Dudleya viscida	sticky dudleya	Dicots	PDCRA040T0	23	3	None	None	G2	S2	1B.2	USFS_S-Sensitive	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub
Empidonax traillii extimus	southwestern willow flycatcher	Birds	ABPAE33043	70	5	Endangered	Endangered	G5T1T2	S1	null	NABCI_RWL-Red Watch List	Riparian woodland
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1137	4	None	None	G3G4	S3	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable | USFS_S-Sensitive	Aquatic | Artificial flowing waters | Klamath/North coast flowing waters | Klamath/North coast standing waters | Marsh & swamp | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast flowing waters | South coast standing waters | Wetland
Ensatina klauberi	large-blotched salamander	Amphibians	AAAAD04013	11	4	None	None	G2G3	S2S3	null	CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	null
	Palmer's goldenbush	Dicots	PDAST3L0C1	16	2	None	None	G4T2T3	S1	1B.1	BLM_S-Sensitive	Chaparral | Coastal scrub

Ericameria palmeri var. palmeri												
Eryngium aristulatum var. parishii	San Diego button-celery	Dicots	PDAPI0Z042	71	5	Endangered	Endangered	G5T1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Coastal scrub | Valley & foothill grassland | Vernal pool | Wetland
Eumops perotis californicus	western mastiff bat	Mammals	AMACD02011	293	8	None	None	G5T4	S3S4	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | WBWG_H-High Priority	Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland
Ferocactus viridescens	San Diego barrel cactus	Dicots	PDCAC08060	229	16	None	None	G3	S3	2B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral | Coastal scrub | Valley & foothill grassland
Gila orcuttii	arroyo chub	Fish	AFCJB13120	49	1	None	None	G2	S2	null	AFS_VU-Vulnerable | CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	Aquatic | South coast flowing waters
Harpagonella palmeri	Palmer's grapplinghook	Dicots	PDBOR0H010	57	8	None	None	G4	S3	4.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral | Coastal scrub | Valley & foothill grassland
Hazardia orcuttii	Orcutt's hazardia	Dicots	PDAST4H070	5	3	None	Threatened	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral | Coastal scrub
Heterotheca sessiliflora ssp. sessiliflora	beach goldenaster	Dicots	PDAST4V0K2	13	1	None	None	G4T2T3	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral | Coastal dunes | Coastal scrub
Horkelia cuneata var. puberula	mesa horkelia	Dicots	PDROS0W045	58	2	None	None	G4T1	S1	1B.1	USFS_S-Sensitive	Chaparral | Cismontane woodland | Coastal scrub
Horkelia truncata	Ramona horkelia	Dicots	PDROS0W0G0	31	3	None	None	G3	S3	1B.3	SB_RSABG-Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Chaparral | Cismontane woodland | Ultramafic
Icteria virens	yellow-breasted chat	Birds	ABPBX24010	84	4	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Riparian forest | Riparian scrub | Riparian woodland
Isocoma menziesii var. decumbens	decumbent goldenbush	Dicots	PDAST57091	63	4	None	None	G3G5T2T3	S2	1B.2	null	Chaparral | Coastal scrub
Iva hayesiana	San Diego marsh-elder	Dicots	PDAST580A0	95	16	None	None	G3?	S2	2B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Alkali playa | Marsh & swamp | Wetland
Ixobrychus exilis	least bittern	Birds	ABNGA02010	9	1	None	None	G5	S2	null	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Marsh & swamp | Wetland
Lasionycteris noctivagans	silver-haired bat	Mammals	AMACC02010	138	1	None	None	G5	S3S4	null	IUCN_LC-Least Concern | WBWG_M-Medium Priority	Lower montane coniferous forest | Oldgrowth | Riparian forest
Lasiurus blossevillii	western red bat	Mammals	AMACC05060	119	2	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_H-High Priority	Cismontane woodland | Lower montane coniferous forest | Riparian forest | Riparian woodland
Lasiurus cinereus	hoary bat	Mammals	AMACC05030	235	6	None	None	G5	S4	null	IUCN_LC-Least Concern | WBWG_M-Medium Priority	Broadleaved upland forest | Cismontane woodland | Lower montane coniferous forest | North coast coniferous forest
Lasiurus xanthinus	western yellow bat	Mammals	AMACC05070	57	2	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern | IUCN_LC-Least	Desert wash

											Concern | WBWG_H-High Priority	
Laterallus jamaicensis coturniculus	California black rail	Birds	ABNME03041	241	1	None	Threatened	G3G4T1	S1	null	BLM_S-Sensitive | CDFW_FP-Fully Protected | IUCN_NT-Near Threatened | NABCI_RWL-Red Watch List | USFWS_BCC-Birds of Conservation Concern	Brackish marsh | Freshwater marsh | Marsh & swamp | Salt marsh | Wetland
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Dicots	PDBRA1M114	142	11	None	None	G5T3	S3	4.3	null	Chaparral | Coastal scrub
Leptosyne maritima	sea dahlia	Dicots	PDAST2L0L0	27	4	None	None	G3	S1	2B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Coastal bluff scrub | Coastal scrub
Lepus californicus bennettii	San Diego black-tailed jackrabbit	Mammals	AMAEB03051	96	3	None	None	G5T3T4	S3S4	null	CDFW_SSC-Species of Special Concern	Coastal scrub
Lilium parryi	lemon lily	Monocots	PMLIL1A0J0	138	5	None	None	G3	S3	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Lower montane coniferous forest | Meadow & seep | Riparian forest | Upper montane coniferous forest | Wetland
Linanthus orcuttii	Orcutt's linanthus	Dicots	PDPLM090X0	29	4	None	None	G4	S2	1B.3	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Chaparral | Lower montane coniferous forest
Maritime Succulent Scrub	Maritime Succulent Scrub	Scrub	CTT32400CA	10	1	None	None	G2	S1.1	null	null	Coastal scrub
Monardella hypoleuca ssp. intermedia	intermediate monardella	Dicots	PDLAM180A4	38	1	None	None	G4T2T3	S2S3	1B.3	null	Chaparral | Cismontane woodland | Lower montane coniferous forest
Monardella hypoleuca ssp. lanata	felt-leaved monardella	Dicots	PDLAM180A2	55	7	None	None	G4T3	S3	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Cismontane woodland
Monardella macrantha ssp. hallii	Hall's monardella	Dicots	PDLAM180E1	38	8	None	None	G5T3	S3	1B.3	SB_RSABG-Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Broadleaved upland forest | Chaparral | Cismontane woodland | Lower montane coniferous forest | Valley & foothill grassland
Monardella nana ssp. leptosiphon	San Felipe monardella	Dicots	PDLAM180F2	20	1	None	None	G4G5T2Q	S2	1B.2	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Chaparral | Lower montane coniferous forest
Myosurus minimus ssp. apus	little mousetail	Dicots	PDRAN0H031	24	3	None	None	G5T2Q	S2	3.1	null	Valley & foothill grassland | Vernal pool | Wetland
Myotis ciliolabrum	western small-footed myotis	Mammals	AMACC01140	82	2	None	None	G5	S3	null	BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_M-Medium Priority	null
Myotis evotis	long-eared myotis	Mammals	AMACC01070	107	2	None	None	G5	S3	null	BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_M-Medium Priority	null
Myotis yumanensis	Yuma myotis	Mammals	AMACC01020	259	4	None	None	G5	S4	null	BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_LM-Low-Medium Priority	Lower montane coniferous forest | Riparian forest | Riparian woodland | Upper montane coniferous forest
Navarretia fossalis	spreading navarretia	Dicots	PDPLM0C080	74	8	Threatened	None	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Alkali playa | Chenopod scrub | Marsh &

												swamp | Vernal pool | Wetland
Neotoma lepida intermedia	San Diego desert woodrat	Mammals	AMAFF08041	115	11	None	None	G5T3T4	S3S4	null	CDFW_SSC-Species of Special Concern	Coastal scrub
Nolina cismontana	chaparral nolina	Monocots	PMAGA080E0	49	4	None	None	G2	S2	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden | SB_SBBG-Santa Barbara Botanic Garden | USFS_S-Sensitive	Chaparral | Coastal scrub
Nyctinomops femorosaccus	pocketed free-tailed bat	Mammals	AMACD04010	90	6	None	None	G4	S3	null	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_M-Medium Priority	Joshua tree woodland | Pinon & juniper woodlands | Riparian scrub | Sonoran desert scrub
Nyctinomops macrotis	big free-tailed bat	Mammals	AMACD04020	32	2	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_MH-Medium-High Priority	null
Passerculus sandwichensis beldingi	Belding's savannah sparrow	Birds	ABPBX99015	36	1	None	Endangered	G5T3	S3	null	null	Marsh & swamp | Wetland
Perognathus longimembris pacificus	Pacific pocket mouse	Mammals	AMAFD01042	13	1	Endangered	None	G5T1	S1	null	CDFW_SSC-Species of Special Concern	Coastal scrub
Phrynosoma blainvillii	coast horned lizard	Reptiles	ARACF12100	727	37	None	None	G3G4	S3S4	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon & juniper woodlands | Riparian scrub | Riparian woodland | Valley & foothill grassland
Plegadis chihi	white-faced ibis	Birds	ABNGE02020	20	2	None	None	G5	S3S4	null	CDFW_WL-Watch List | IUCN_LC-Least Concern	Marsh & swamp | Wetland
Plestiodon skiltonianus interparietalis	Coronado Island skink	Reptiles	ARACH01114	33	6	None	None	G5T2T3Q	S1S2	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern	Chaparral | Cismontane woodland | Pinon & juniper woodlands
Polioptila californica californica	coastal California gnatcatcher	Birds	ABPBJ08081	807	90	Threatened	None	G3T2	S2	null	CDFW_SSC-Species of Special Concern | NABCI_YWL-Yellow Watch List	Coastal bluff scrub | Coastal scrub
Pyrgus ruralis lagunae	Laguna Mountains skipper	Insects	IILEP38021	3	1	Endangered	None	G5T1	S1	null	XERCES_CI-Critically Imperiled	Subalpine coniferous forest
Quercus dumosa	Nuttall's scrub oak	Dicots	PDFAG050D0	148	18	None	None	G3	S3	1B.1	USFS_S-Sensitive	Chaparral | Closed-cone coniferous forest | Coastal scrub
Rallus longirostris levipes	light-footed clapper rail	Birds	ABNME05014	30	1	Endangered	Endangered	G5T1T2	S1	null	CDFW_FP-Fully Protected | NABCI_RWL-Red Watch List	Marsh & swamp | Salt marsh | Wetland
Rana muscosa	southern mountain yellow-legged frog	Amphibians	AAABH01330	186	1	Endangered	Endangered	G1	S1	null	CDFW_SSC-Species of Special Concern | IUCN_EN-Endangered | USFS_S-Sensitive	Aquatic
Salvadora hexalepis virgultea	coast patch-nosed snake	Reptiles	ARADB30033	22	3	None	None	G5T4	S2S3	null	CDFW_SSC-Species of Special Concern	Coastal scrub
San Diego Mesa Claypan Vernal Pool	San Diego Mesa Claypan Vernal Pool	Herbaceous	CTT44322CA	19	1	None	None	G2	S2.1	null	null	Vernal pool | Wetland
		Dicots	PDLAM1U0A1	32	2	None	None	G4T2	S2	1B.2	USFS_S-Sensitive	

Scutellaria bolanderi ssp. austromontana	southern mountains skullcap											Chaparral | Cismontane woodland | Lower montane coniferous forest
Setophaga petechia	yellow warbler	Birds	ABPBX03010	50	1	None	None	G5	S3S4	null	CDFW_SSC-Species of Special Concern | USFWS_BCC-Birds of Conservation Concern	Riparian forest | Riparian scrub | Riparian woodland
Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest	Riparian	CTT61310CA	246	2	None	None	G4	S4	null	null	Riparian forest
Southern Coastal Salt Marsh	Southern Coastal Salt Marsh	Marsh	CTT52120CA	24	1	None	None	G2	S2.1	null	null	Marsh & swamp | Wetland
Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest	Riparian	CTT61330CA	111	4	None	None	G3	S3.2	null	null	Riparian forest
Southern Maritime Chaparral	Southern Maritime Chaparral	Scrub	CTT37C30CA	26	5	None	None	G1	S1.1	null	null	Chaparral
Southern Riparian Forest	Southern Riparian Forest	Riparian	CTT61300CA	20	5	None	None	G4	S4	null	null	Riparian forest
Southern Riparian Scrub	Southern Riparian Scrub	Riparian	CTT63300CA	56	5	None	None	G3	S3.2	null	null	Riparian scrub
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland	Riparian	CTT62400CA	230	1	None	None	G4	S4	null	null	Riparian woodland
Southern Willow Scrub	Southern Willow Scrub	Riparian	CTT63320CA	45	1	None	None	G3	S2.1	null	null	Riparian scrub
Spea hammondii	western spadefoot	Amphibians	AAABF02020	426	9	None	None	G3	S3	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened	Cismontane woodland | Coastal scrub | Valley & foothill grassland | Vernal pool | Wetland
Stemodia durantifolia	purple stemodia	Dicots	PDSCR1U010	19	2	None	None	G5	S2	2B.1	null	Sonoran desert scrub
Sternula antillarum browni	California least tern	Birds	ABNNM08103	67	1	Endangered	Endangered	G4T2T3Q	S2	null	CDFW_FP-Fully Protected | NABCI_RWL-Red Watch List	Alkali playa | Wetland
Streptocephalus woottoni	Riverside fairy shrimp	Crustaceans	ICBRA07010	68	1	Endangered	None	G1G2	S1S2	null	IUCN_EN-Endangered	Coastal scrub | Valley & foothill grassland | Vernal pool | Wetland
Symphyotrichum defoliatum	San Bernardino aster	Dicots	PDASTE80C0	76	2	None	None	G2	S2	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Cismontane woodland | Coastal scrub | Lower montane coniferous forest | Marsh & swamp | Meadow & seep | Valley & foothill grassland | Wetland
Taxidea taxus	American badger	Mammals	AMAJF04010	476	4	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Alkali marsh | Alkali playa | Alpine | Alpine dwarf scrub | Bog & fen | Brackish marsh | Broadleaved upland forest | Chaparral | Chenopod scrub | Cismontane woodland | Closed-cone coniferous forest | Coastal bluff scrub | Coastal dunes | Coastal

												prairie | Coastal scrub | Desert dunes | Desert wash | Freshwater marsh | Great Basin grassland | Great Basin scrub | Interior dunes | Ione formation | Joshua tree woodland | Limestone | Lower montane coniferous forest | Marsh & swamp | Meadow & seep | Mojavean desert scrub | Montane dwarf scrub | North coast coniferous forest | Oldgrowth | Pavement plain | Redwood | Riparian forest | Riparian scrub | Riparian woodland | Salt marsh | Sonoran desert scrub | Sonoran thorn woodland | Ultramafic | Upper montane coniferous forest | Upper Sonoran scrub | Valley & foothill grassland
Tetracoccus dioicus	Parry's tetracoccus	Dicots	PDEUP1C010	46	13	None	None	G3?	S2	1B.2	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Chaparral | Coastal scrub | Ultramafic
Thamnophis hammondii	two-striped garter snake	Reptiles	ARADB36160	147	5	None	None	G4	S3S4	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Marsh & swamp | Riparian scrub | Riparian woodland | Wetland
Tryonia imitator	mimic tryonia (=California brackishwater snail)	Mollusks	IMGASJ7040	39	1	None	None	G2	S2	null	IUCN_DD-Data Deficient	Aquatic | Brackish marsh | Estuary | Lagoon | Marsh & swamp | Salt marsh | Wetland
Vireo bellii pusillus	least Bell's vireo	Birds	ABPBW01114	467	21	Endangered	Endangered	G5T2	S2	null	IUCN_NT-Near Threatened | NABCI_YWL-Yellow Watch List	Riparian forest | Riparian scrub | Riparian woodland

ATTACHMENT B

California Native Plant Society (CNPS) Rare Plant Inventory

CNPS California Native Plant Society

Rare and Endangered Plant Inventory

Plant List

82 matches found. *Click on scientific name for details*

Search Criteria

Rare Plant Rank is one of [1A, 1B, 2A, 2B, 3, 4], FESA is one of [Endangered, Threatened, Species of Concern, Not Listed], CESA is one of [Endangered, Threatened, Rare, Not Listed], Found in 9 Quads around 33117B1, Lifeform is one of [Tree, Shrub, Leaf succulent, Herb, Vine, Stem succulent, Lichen, Moss, Liverwort], Duration is one of [ann, per, ephem], Bloom Time is one of [January, February, March, April, May, June, July, August, September, October, November, December]

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Acanthomintha ilicifolia	San Diego thorn-mint	Lamiaceae	annual herb	1B.1	S1	G1
Adolphia californica	California adolphia	Rhamnaceae	perennial deciduous shrub	2B.1	S2	G3
Ambrosia pumila	San Diego ambrosia	Asteraceae	perennial rhizomatous herb	1B.1	S1	G1
Arctostaphylos glandulosa ssp. crassifolia	Del Mar manzanita	Ericaceae	perennial evergreen shrub	1B.1	S2	G5T2
Arctostaphylos rainbowensis	Rainbow manzanita	Ericaceae	perennial evergreen shrub	1B.1	S2	G2
Artemisia palmeri	San Diego sagewort	Asteraceae	perennial deciduous shrub	4.2	S3?	G3G4
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	4.2	S4	G4
Astragalus oocarpus	San Diego milk-vetch	Fabaceae	perennial herb	1B.2	S3	G3
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	1B.2	S2	G2
Atriplex pacifica	South Coast saltscale	Chenopodiaceae	annual herb	1B.2	S2	G3G4
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	1B.1	S1	G1G2
Baccharis vanessae	Encinitas baccharis	Asteraceae	perennial deciduous shrub	1B.1	S1	G1
Berberis nevinii	Nevin's barberry	Berberidaceae	perennial evergreen shrub	1B.1	S1	G1
Bloomeria clevelandii	San Diego goldenstar	Themidaceae	perennial bulbiferous herb	1B.1	S2	G2
Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	1B.1	S1	G1
Brodiaea orcuttii	Orcutt's brodiaea	Themidaceae	perennial bulbiferous herb	1B.1	S2	G2
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Calochortus dunnii	Dunn's mariposa lily	Liliaceae	perennial bulbiferous herb	1B.2	S2?	G2?
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	3	S4	G4
Caulanthus simulans	Payson's jewel-flower	Brassicaceae	annual herb	4.2	S4	G4
Ceanothus verrucosus	wart-stemmed ceanothus	Rhamnaceae	perennial evergreen shrub	2B.2	S2	G3
Centromadia parryi ssp. australis	southern tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Centromadia pungens ssp. laevis	smooth tarplant	Asteraceae	annual herb	1B.1	S2	G3G4T2
Chamaebatia australis	southern mountain misery	Rosaceae	perennial evergreen shrub	4.2	S4	G4
Chorizanthe leptotheca	Peninsular spineflower	Polygonaceae	annual herb	4.2	S3	G3
Chorizanthe orcuttiana	Orcutt's spineflower	Polygonaceae	annual herb	1B.1	S1	G1

Clarkia delicata	delicate clarkia	Onagraceae	annual herb	1B.2	S3	G3
Comarostaphylis diversifolia ssp. diversifolia	summer holly	Ericaceae	perennial evergreen shrub	1B.2	S2	G3T2
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	4.2	S4	G4
Corethrogyne filaginifolia var. incana	San Diego sand aster	Asteraceae	perennial herb	1B.1	S1	G4T1
Corethrogyne filaginifolia var. linifolia	Del Mar Mesa sand aster	Asteraceae	perennial herb	1B.1	S1	G4T1
Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	4.2	S4	G4
Delphinium hesperium ssp. cuyamacae	Cuyamaca larkspur	Ranunculaceae	perennial herb	1B.2	S2	G4T2
Dichondra occidentalis	western dichondra	Convolvulaceae	perennial rhizomatous herb	4.2	S3S4	G3G4
Dudleya alainae	Banner dudleya	Crassulaceae	perennial herb	3.2	S1?	G1?Q
Dudleya variegata	variegated dudleya	Crassulaceae	perennial herb	1B.2	S2	G2
Dudleya viscida	sticky dudleya	Crassulaceae	perennial herb	1B.2	S2	G2
Ericameria palmeri var. palmeri	Palmer's goldenbush	Asteraceae	perennial evergreen shrub	1B.1	S1	G4T2T3
Eryngium aristulatum var. parishii	San Diego button-celery	Apiaceae	annual / perennial herb	1B.1	S1	G5T1
Ferocactus viridescens	San Diego barrel cactus	Cactaceae	perennial stem succulent	2B.1	S3	G3
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	4.2	S3	G4
Hazardia orcuttii	Orcutt's hazardia	Asteraceae	perennial evergreen shrub	1B.1	S1	G1
Heterotheca sessiliflora ssp. sessiliflora	beach goldenaster	Asteraceae	perennial herb	1B.1	S1	G4T2T3
Holocarpha virgata ssp. elongata	graceful tarplant	Asteraceae	annual herb	4.2	S3	G5T3
Hordeum intercedens	vernal barley	Poaceae	annual herb	3.2	S3S4	G3G4
Horkelia cuneata var. puberula	mesa horkelia	Rosaceae	perennial herb	1B.1	S1	G4T1
Horkelia truncata	Ramona horkelia	Rosaceae	perennial herb	1B.3	S3	G3
Hulsea californica	San Diego sunflower	Asteraceae	perennial herb	1B.3	S2	G2
Isocoma menziesii var. decumbens	decumbent goldenbush	Asteraceae	perennial shrub	1B.2	S2	G3G5T2T3
Iva hayesiana	San Diego marsh-elder	Asteraceae	perennial herb	2B.2	S2	G3?
Juncus acutus ssp. leopoldii	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	4.2	S4	G5T5
Lepechinia cardiophylla	heart-leaved pitcher sage	Lamiaceae	perennial shrub	1B.2	S2S3	G3?
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Brassicaceae	annual herb	4.3	S3	G5T3
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemoniaceae	annual herb	4.2	S3	G3
Leptosyne maritima	sea dahlia	Asteraceae	perennial herb	2B.2	S1	G3
Lilium parryi	lemon lily	Liliaceae	perennial bulbiferous herb	1B.2	S3	G3
Linanthus orcuttii	Orcutt's linanthus	Polemoniaceae	annual herb	1B.3	S2	G4
Microseris douglasii ssp. platycarpha	small-flowered microseris	Asteraceae	annual herb	4.2	S4	G4T4
Mimulus clevelandii	Cleveland's bush monkeyflower	Phrymaceae	perennial rhizomatous herb	4.2	S4	G4
Mimulus diffusus	Palomar monkeyflower	Phrymaceae	annual herb	4.3	S3	G4Q
Monardella hypoleuca ssp. intermedia	intermediate monardella	Lamiaceae	perennial rhizomatous herb	1B.3	S2S3	G4T2T3
Monardella hypoleuca ssp. lanata	felt-leaved monardella	Lamiaceae	perennial rhizomatous herb	1B.2	S3	G4T3
Monardella macrantha ssp. hallii	Hall's monardella	Lamiaceae	perennial rhizomatous herb	1B.3	S3	G5T3
Monardella nana ssp. leptosiphon	San Felipe monardella	Lamiaceae	perennial rhizomatous herb	1B.2	S2	G4G5T2Q
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	3.1	S2	G5T2Q
Navarretia fossalis	spreading navarretia	Polemoniaceae	annual herb	1B.1	S1	G1

Nolina cismontana	chaparral nolina	Ruscaceae	perennial evergreen shrub	1B.2	S2	G2
Ophioglossum californicum	California adder's-tongue	Ophioglossaceae	perennial rhizomatous herb	4.2	S4	G4
Pentachaeta aurea ssp. aurea	golden-rayed pentachaeta	Asteraceae	annual herb	4.2	S3	G4T3
Phacelia ramosissima var. austrolitoralis	south coast branching phacelia	Boraginaceae	perennial herb	3.2	S3	G5?T3
Polygala cornuta var. fishiae	Fish's milkwort	Polygalaceae	perennial deciduous shrub	4.3	S4	G5T4
Psilocarphus brevissimus var. multiflorus	Delta woolly-marbles	Asteraceae	annual herb	4.2	S3	G4T3
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	1B.1	S3	G3
Quercus engelmannii	Engelmann oak	Fagaceae	perennial deciduous tree	4.2	S3	G3
Saltugilia caruifolia	caraway-leaved woodland-gilia	Polemoniaceae	annual herb	4.3	S4	G4
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap	Lamiaceae	perennial rhizomatous herb	1B.2	S2	G4T2
Stemodia durantifolia	purple stemodia	Plantaginaceae	perennial herb	2B.1	S2	G5
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2
Tetracoccus dioicus	Parry's tetracoccus	Picrodendraceae	perennial deciduous shrub	1B.2	S2	G3?
Viguiera laciniata	San Diego County viguiera	Asteraceae	perennial shrub	4.2	S4	G4
Viola purpurea ssp. aurea	golden violet	Violaceae	perennial herb	2B.2	S2S3	G5T2T3
Xanthisma junceum	rush-like bristleweed	Asteraceae	perennial herb	4.3	S4	G5

Suggested Citation

CNPS, Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed 26 February 2015].

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ATTACHMENT C

U.S. Fish and Wildlife Service (USFWS) IPaC Trust Resource Report

U.S. Fish & Wildlife Service

Escondido MFRO

IPaC Trust Resource Report

Generated July 14, 2015 05:48 PM MDT

US Fish & Wildlife Service

IPaC Trust Resource Report

Project Description

NAME

Escondido MFRO

PROJECT CODE

R2OIC-GLNMN-DZ7GH-RSPXI-DKQE7E

LOCATION

San Diego County, California

DESCRIPTION

No description provided

U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the Endangered Species Program and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under Section 7 of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an Official Species List from the regulatory documents section.

Birds

Coastal California Gnatcatcher Polioptila californica californica — **Threatened**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08X

Least Bell's Vireo Vireo bellii pusillus — **Endangered**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B067

Southwestern Willow Flycatcher Empidonax traillii extimus — **Endangered**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B094

Flowering Plants

San Diego Ambrosia Ambrosia pumila **Endangered**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q01H

San Diego Thornmint Acanthomintha ilicifolia **Threatened**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q00E

Willowy Monardella Monardella viminea **Endangered**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q18M

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

Bald Eagle Haliaeetus leucocephalus — **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008

Bell's Sparrow Amphispiza belli — **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HE

Black-chinned Sparrow Spizella atrogularis — **Bird of conservation concern**
Season: Breeding

Brewer's Sparrow Spizella breweri — **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HA

Burrowing Owl Athene cunicularia — **Bird of conservation concern**
Year-round

Cactus Wren Campylorhynchus brunneicapillus — **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FZ

Costa's Hummingbird Calypte costae — **Bird of conservation concern**
Season: Breeding

Fox Sparrow Passerella iliaca — **Bird of conservation concern**
Season: Wintering

Green-tailed Towhee Pipilo chlorurus — **Bird of conservation concern**
Season: Breeding

Gull-billed Tern Gelochelidon nilotica — **Bird of conservation concern**
Season: Breeding

Lawrence's Goldfinch Carduelis lawrencei — **Bird of conservation concern**
Year-round

Least Bittern Ixobrychus exilis — **Bird of conservation concern**
Year-round

Lewis's Woodpecker Melanerpes lewis — **Bird of conservation concern**
Season: Wintering

Loggerhead Shrike Lanius ludovicianus — **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FY

Long-billed Curlew Numenius americanus **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06S

Lucy's Warbler Vermivora luciae **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DL

Mountain Plover Charadrius montanus **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B078

Nuttall's Woodpecker Picoides nuttallii **Bird of conservation concern**
Year-round

Oak Titmouse Baeolophus inornatus **Bird of conservation concern**
Year-round

Olive-sided Flycatcher Contopus cooperi **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AN

Peregrine Falcon Falco peregrinus **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU

Short-billed Dowitcher Limnodromus griseus **Bird of conservation concern**
Season: Wintering

Short-eared Owl Asio flammeus **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD

Tricolored Blackbird Agelaius tricolor **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06P

White Headed Woodpecker Picoides albolarvatus **Bird of conservation concern**
Year-round

Red Knot Calidris canutus ssp. roselaari **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0G6

Refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to NWI wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

There are no wetlands identified in this project area

Focused Biological Surveys

ESA

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San Diego, CA 92101
619.719.4200 phone
619.719.4201 fax

www.esassoc.com

memorandum

date November 11, 2015

to Jay Petrek, AICP, Director of Community Development, City of Escondido

from Alanna Bennett

subject City of Escondido MFRO Oak Tree Survey

Section 33-1066, 33-1068, and 33-1069 of Article 55 (Grading and Erosion Control) of the City of Escondido Zoning Code regulates impacts to historically significant and/or mature trees, with a focus on oak tree protection. Protected trees are defined as "any oak (*Quercus* sp.) which has a ten (10) inch or greater trunk diameter at breast height (DBH), or any other species or individual specimen listed on the historic register, or determined to substantially contribute to the historic character of a property or structure listed on the local historic register, pursuant to Article 40 of the Escondido Zoning Code (2001)." The purpose of this memorandum is to document the results of an oak tree survey conducted for the City of Escondido Membrane Filtration/Reverse Osmosis (MFRO) Facility Project (project), located in Escondido, San Diego County, California. This project involves the construction of an MFRO facility to treat tertiary effluent, which would remove salts from the effluent so that it may supply agricultural and landscape uses, thereby lowering overall water demand. The MFRO facility is proposed to be constructed on a 3.23 acre parcel of land owned by the City of Escondido, northwest of East Washington Avenue between North Citrus Avenue and East El Norte Parkway (**Figure 1**). The project site is relatively flat and is at approximately 720 feet above mean sea level (amsl). Adjacent land uses include residential and light commercial development.

Methods

On October 21, 2015, Environmental Science Associates (ESA) biologist Alanna Bennett performed an oak tree survey at the project site. All oak trees with a diameter at breast height (DBH) of three inches or greater occurring onsite were evaluated.

Data were collected for the following parameters:

- Species of oak
- Health (alive or dead)
- Size of trunk (diameter at breast height); each trunk in a multiple trunk tree was recorded individually
- Extent of canopy in a north, south, east, and west direction
- Height

All qualifying oak tree species with a DBH of three inches or greater were recorded with a Trimble GeoExplorer 6000 series. **Figure 2** shows the location of these trees.

Results

The project site is situated within an urban environment, with residences and roads bordering the site on all sides. The dominant vegetation type is annual brome grassland dominated almost exclusively by non-native forbs and grasses, with scattered trees along the edges. Mexican fan palm (*Washingtonia robusta*) and eucalyptus (*Eucalyptus* sp.) are located on the southeastern edge, eucalyptus is located on the southern edge, and Brazilian pepper (*Schinus terebinthifolius*) and coast live oak (*Quercus agrifolia*) line the southwestern edge.

A total of eight oak trees with a DBH of three inches or greater were recorded onsite. All oaks were coast live oak (**Table 1**). All recorded trees were alive and did not exhibit any signs of disease or significant stress. Only three of the trees had multiple trunks. Trunk diameters varied from 3.5 inches to 16.8 inches and canopies varied from approximately 13 feet to 60 feet in diameter. Oak tree heights ranged from approximately 12 to 50 feet tall. Five of the eight oak trees occurring onsite meet the City of Escondido's definition of a protected tree (an oak species with a DBH of 10 inches or greater). Photographs of the trunks and canopies of each tree surveyed are attached to this memo. No trees listed on the historic register occur on this site; therefore, no data were collected for historic trees.

Table 1. Oak Tree Characteristics

			DBH (in)			Canopy (ft)				
Tree #	**Species**	**Health**	**Trunk 1**	**Trunk 2**	**Trunk 3**	**North**	**South**	**East**	**West**	**Height (ft)**
1	Coast live oak	Alive	15.1	-	-	25	20	35	20	50
2	Coast live oak	Alive	10.3	-	-	35	10	10	30	50
3	Coast live oak	Alive	3.5	-	-	8	5	10	5	12
4	Coast live oak	Alive	6.0	-	-	10	5	30	0	25
5	Coast live oak	Alive	8.3	-	-	5	20	15	25	50
6	Coast live oak	Alive	16.8	3.7	-	35	15	35	25	50
7	Coast live oak	Alive	10.6	5.7	3.0	25	10	20	25	35
8	Coast live oak	Alive	14.4	11.4	-	20	15	25	20	35

Attachments:

Figure 1. Project Vicinity

Figure 2. Oak Trees Recorded Onsite

Selected Oak Tree Photographs

SOURCE: ESRI.

City of Escondido Phase I . 150245

Figure 1
Project Vicinity

SOURCE: ESRI

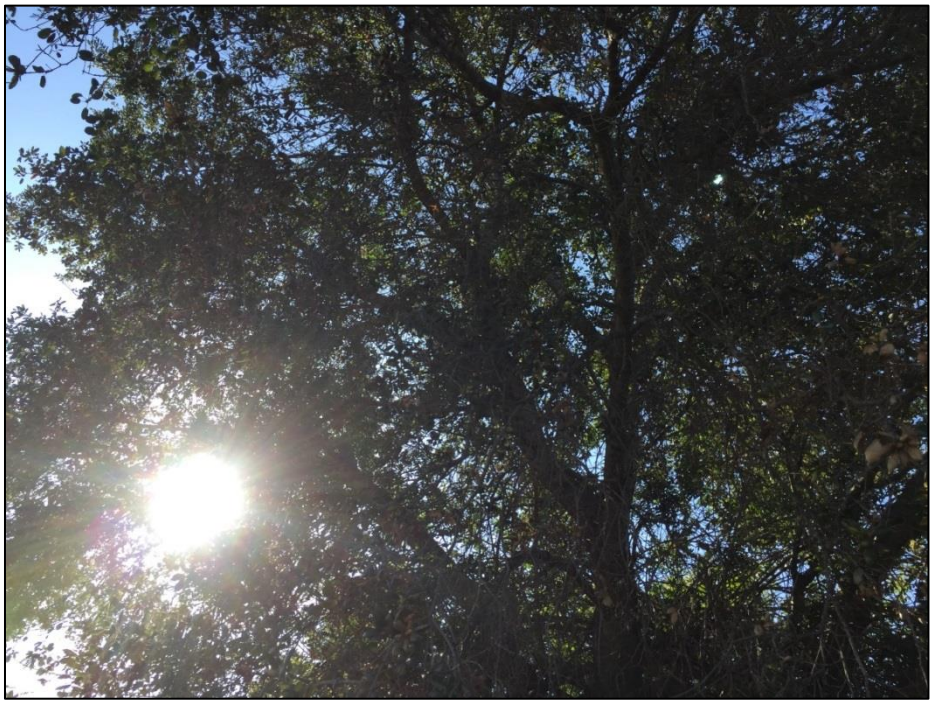
City of Escondido Phase I . 150245

Figure 2

Oak Trees Recorded Onsite

Selected Oak Tree Photographs

Oak tree 1 trunk—looking south



Oak tree 1 canopy—looking south

Selected Oak Tree Photographs

Oak tree 2 trunk—looking southwest

Oak tree 2 canopy—looking southwest

Selected Oak Tree Photographs

Oak tree 3 trunk—looking west

Oak tree 3 canopy—looking west

Selected Oak Tree Photographs

Oak tree 4 trunk and canopy—looking east

Oak tree 4 canopy—looking south

Selected Oak Tree Photographs

Oak tree 5 trunk—looking northwest

Oak tree 5 canopy—looking skyward (interspersed with Brazilian pepper tree)

Selected Oak Tree Photographs

Oak tree 6 trunk—looking south

Oak tree 6 canopy—looking west

Selected Oak Tree Photographs

Oak tree 7 trunk—looking northwest

Oak tree 7 canopy—looking west

Selected Oak Tree Photographs

Oak tree 8 trunk—looking northwest

Oak tree 8 canopy—looking northwest

ESA

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Suite 750
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www.esassoc.com

memorandum

date November 11, 2015

to Jay Petrek, AICP, Director of Community Development, City of Escondido

from Alanna Bennett

subject City of Escondido MFRO Rare Plant Survey

The purpose of this memorandum is to document the results of 2015 rare plant surveys conducted for the City of Escondido Membrane Filtration/Reverse Osmosis (MFRO) Facility Project (project), located in Escondido, San Diego County, California. This project involves the construction of an MFRO facility to treat tertiary effluent, which would remove salts from the effluent so that it may supply agricultural and landscape uses, thereby lowering overall water demand. The MFRO facility is proposed to be constructed on a 3.23 acre parcel of land owned by the City of Escondido, northwest of East Washington Avenue between North Citrus Avenue and East El Norte Parkway (**Figure 1**). The project site is relatively flat and is at approximately 720 feet above mean sea level (amsl). Adjacent land uses include residential and light commercial development.

Of the 83 special-status plant species known to occur in the vicinity of the project area, only San Diego ambrosia (*Ambrosia pumila*) and southern tarplant (*Centromadia parryi* ssp. *australis*) were determined to have a moderate or greater potential to occur on the project site based on the suitability of the habitat onsite and the known species distribution. These two species have been observed within one mile of the site and are known to occur in disturbed areas similar to those on the project site. However, the presence or absence of the species can only be verified during the appropriate blooming season; southern tarplant blooms from May-November and San Diego ambrosia blooms from April-November.

Methods

On October 14, 21, and 28, 2015, Environmental Science Associates (ESA) biologist Alanna Bennett performed a total of three rare plant surveys at the project site. The purpose of these surveys was to document all plant species occurring onsite and survey the area for any occurrences of rare plant species, including San Diego ambrosia and southern tarplant. During each site visit the entire 3.23 acre parcel was walked in its entirety in parallel transects to ensure that all portions of the survey area were directly observed.

Results

The project site is situated within an urban environment, with residences and roads bordering the site on all sides. The vegetation within the survey area consists of annual brome grassland with scattered trees along some of the edges. Coast live oaks (*Quercus agrifolia*) partially line the southwestern edge of the site; all other trees onsite are non-native. The habitat condition onsite is highly disturbed; the site appears to be regularly mowed.

The perimeter of the site consists largely of dense tumbleweed (*Amaranthus albus*), Russian thistle (*Salsola tragus*), cheeseweed (*Malva parviflora*), and is intermixed with wild oat (*Avena* sp.), bindweed (*Convolvulus arvensis*), and redstem filaree (*Erodium cicutarium*). All of these dominant and co-dominant species are non-native weeds. The central portion of the site is mostly thatch-covered ground with a colony of ground squirrel burrows and isolated jimson weed (*Datura stramonium*) and dove weed (*Croton setigerus*) dispersed throughout. Several trees are distributed along the southeast, south, and southwest edges of the site. Mexican fan palm (*Washingtonia robusta*) and eucalyptus (*Eucalyptus* sp.) are located on the southeastern edge, eucalyptus is located on the southern edge, and Brazilian peppertree (*Schinus terebinthifolius*) and coast live oak (*Quercus agrifolia*) line the southwestern edge. **Table 1** lists all plants species observed onsite.

Table 1. Plant Species Observed Onsite

Common Name	Scientific Name
Tumbleweed*	*Amaranthus albus*
White bur-sage*	*Ambrosia dumosa*
False indigo bush*	*Amorpha fruticosa*
Red apple ice plant*	*Aptenia cordifolia*
Slender wild oat*	*Avena barbata*
Wild oat*	*Avena fatua*
Ripgut grass*	*Bromus diandrus*
Spotted spurge*	*Chamaesyce maculata*
Bindweed*	*Convolvulus arvensis*
Dove weed	*Croton setigerus*
Bermuda grass*	*Cynodon dactylon*
Jimson weed*	*Datura stramonium*
Hairy crab grass*	*Digitaria sanguinalis*
Redstem filaree*	*Erodium cicutarium*
Eucalyptus*	*Eucalyptus sp.*
Our lord's candle*	*Hesperoyucca whipplei*
Cheeseweed*	*Malva parviflora*
Lemmon's canary grass*	*Phalaris lemmonii*
Purslane*	*Portulaca oleracea*
Coast live oak	*Quercus agrifolia*
Curly dock*	*Rumex crispus*
Russian thistle*	*Salsola tragus*
Brazilian pepper tree*	*Schinus terebinthifolius*
Sow thistle*	*Sonchus oleraceus*
Smilo grass*	*Stipa miliacea*
Puncture vine*	*Tribulus terrestris*
Ornamental grape*	*Vitis* sp.
Mexican fan palm*	*Washingtonia robusta*

*Indicates non-native species

Neither southern tarplant nor San Diego ambrosia were observed during the rare plant surveys. No other sensitive plant species were observed onsite. Although surveys were performed near the end of the blooming period for both species, the potential for either species to occur onsite is marginal.

Southern tarplant is typically found in the margins of marshes and swamps, vernally mesic valley and foothill grasslands, and vernal pools. Although the site may experience seasonal inundation, no vernal pool or marsh habitat is present onsite. San Diego ambrosia is typically found in chaparral, coastal scrub, valley and foothill grasslands, and vernal pool habitats, often in disturbed areas. The site is saturated with almost exclusively non-native species. Although San Diego ambrosia can be found in disturbed habitats, the appropriate habitat is not present onsite. Additionally, the site is surrounded by roads and residences; therefore, the chance of San Diego ambrosia or southern tarplant seed arriving onsite from populations over a mile away is minimal. No sensitive species, including southern tarplant and San Diego ambrosia, occur on the project site. **Attachment 1** shows photographs of the project site.

References

Lichvar, R. W., N.C. Melvin, M. L. Butterwick, W.N. Kirchner, US Army Corps of Engineers (Corps), National Wetland Plant List Indicator Rating Definitions, 2012.

Attachments

Figure 1.Project Vicinity
Selected Photographs of Vegetation Onsite

SOURCE: ESRI.

City of Escondido Phase I . 150245

Figure 1
Project Vicinity

Tumbleweed, Russian thistle, and eucalyptus—looking northwest from Washington Avenue

Groundcover with tumbleweed and thatch–looking north towards the center of the site

Central portion of the site displaying ground squirrel burrows, jimson weed, and thatch

Disturbed habitat with high Russian thistle cover—looking east

Russian thistle in the foreground, oak trees line fence in the background—looking southwest

APPENDIX C

Phase I Cultural Resources Study

CITY OF ESCONDIDO MFRO FACILITY FOR AGRICULTURE PROJECT

Phase I Cultural Resources Study

Prepared for
City of Escondido

February 2016

CITY OF ESCONDIDO MFRO FACILITY FOR AGRICULTURE PROJECT

Phase I Cultural Resources Study

Prepared for:
City of Escondido
201 North Broadway
Escondido, CA, 92025

February 2016

Prepared by:
ESA
626 Wilshire Boulevard, Suite 1100
Los Angeles, California 90017

Project Director:
Monica Strauss, M.A., R.P.A.

Principal Investigator:
Candace Ehringer, M.A., R.P.A.

Authors:
Michael Vader, B.A.
Chris Lockwood, Ph.D., R.P.A.

Project Location: Valley Center (CA) USGS 7.5-minute Topographic Quad
Township 12 South, Range 2 West, Unsectioned

Acreage: Approx. 3.22 acres

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EXECUTIVE SUMMARY

City of Escondido MFRO Facility for Agriculture Project - Phase I Cultural Resources Study

Environmental Science Associates (ESA) has been retained by the City of Escondido (City) to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO Facility) for Agriculture Project (Project). The Project would include the construction of an MFRO Facility, which would provide advanced treatment for Title 22 quality reuse water produced at the Hale Avenue Resources Recovery Facility (HARRF), a City-owned and operated recycled water treatment disposal facility. The Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The EPA established a process, known as California Environmental Quality Act (CEQA)-Plus, for SWRCB to administer the SRF Loan Program in compliance with federal statutes. This Phase I cultural resources study has been prepared in support of the IS/MND in compliance with CEQA-Plus guidelines. The City is the lead agency responsible for compliance with CEQA-Plus.

The 3.22-acreProject area is located within the City of Escondido, in northwest San Diego County. Specifically, the Project is located within Assessor's Parcel Number 225-27-05-400, northwest of East Washington Avenue between North Citrus Avenue and East El Norte Parkway within the eastern portion of Escondido in an un-sectioned portion of the Valley Center 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle. The Project includes the construction of an MFRO Facility, which would provide advanced treatment for Title 22 quality reuse water produced at HARRF. The treatment process will produce a high-quality water supply low in total dissolved solids (TDS) and chlorides concentration to local avocado growers. The MFRO facility would utilize membrane filtration (i.e. microfiltration [MF] or ultrafiltration [UF]) membranes and reverse osmosis (RO) technologies.

A historic architectural/archaeological Area of Potential Effects (APE) for the Project was established according to Section 106 of the NHPA in coordination with the City. The horizontal APE encompasses the 3.22-acre Project footprint, which includes the entirety of APN 225-27-05-400. The vertical APE includes the anticipated maximum depth of ground disturbance of 20 feet and the maximum height of the MFRO Facility of 35 feet above ground surface.

A records search for the Project was conducted on March 16, 2015 at the California Historical Resources Information System (CHRIS) South Coastal Information Center (SCIC) housed at San

Diego State University. A total of 12 cultural resources studies have been conducted within a ½ mile radius of the Project APE. Of the 12 previous studies, two include portions of the Project APE. Approximately 50 percent of the Project APE has been included in previous cultural resources surveys. The records search indicated that 17 cultural resources have been previously recorded within a ½-mile radius of the Project APE. These resources include: four prehistoric archaeological sites (CA-SDI-016446, -016447, -016448, and -017306), three historic-period archaeological sites (CA-SDI-016500, -017597, and -017658), and ten historic-period built resources (P-37-018731, -018733, -030889 [Vista Irrigation Bench Flumes], 1032 Paula Way, 2115 East Lincoln Avenue, 2196 Montemar Avenue, 2225 East Lincoln Avenue, 2237 East Lincoln Avenue, 2421 East Washington Avenue, 2739 East Washington Avenue). No resources have been previously recorded within or immediately adjacent to (within 50 feet of) the Project APE.

A Sacred Lands File (SLF) search was requested from the California Native American Heritage Commission (NAHC) on February 26, 2015. The SLF search results indicated that Native American cultural resources are known to be located within the vicinity of the Project APE on the Valley Center 7.5-minute USGS topographic quadrangle; however, no specific information regarding the types or exact locations of the resources was provided. Follow-up contact with Native American groups and/or individuals identified by the NAHC as having affiliation with the Project APE vicinity was conducted via certified mail on April 16, 2015 and via phone on April 23 and 27, 2015. To date five responses have been received. In an email dated April 21, 2015, Chris Devers of the Pauma and Yuima Reservation Cultural Committee stated that he was unaware of any specific cultural resources within the vicinity of the Project APE, but requested that all Project-related ground disturbance be monitored by archaeological and Native American monitors. Mr. Devers also requested that he be kept informed on the progress of the Project. In a letter dated April 23, 2015, Shasta Gaughen, Tribal Historic Preservation Officer for the Pala Band of Mission Indians, stated that the Project is located outside of the Pala Band's Traditional Use Area (TUA), but requested that she be kept informed as to the progress of the Project. In addition, Ms. Gaughen asked that she be provided with Project updates, progress reports, and any documentation generated regarding previously reported or newly discovered sites. Ms. Gaughen also recommended that approved cultural monitors be on-site during all Project-related ground-disturbing activities. In an email dated April 30, 2015, Carmen Mojado of the San Luis Rey Band of Mission Indians Cultural Resources Department requested a copy of the cultural reports and results of the SLF search. In a letter response received on May 13, 1015 (dated April 2, 2015), Rose Duro, writing on behalf of the Rincon Band of Luiseño Indians, stated that the project is located within the Aboriginal Territory of the Luiseño people, and also within in the Rincon's historic boundaries and TUA. Ms. Duro indicated that the Rincon believe there is potential for cultural materials and requested that the Rincon Cultural Resources Department be afforded the opportunity to provide a Native American monitor for the Project. In a letter response dated May 28, 2015, Joseph Ontiveros, Cultural Resources Director for the Soboba Band of Luiseño Indians, stated that the Project APE is located within the Soboba Tribal TUA, and requested that a Native American monitor be present during Project-related ground disturbing activities including cultural resources surveys and testing, as well as construction. Mr. Ontiveros requested that the City defer to groups in closer proximity to the Project APE for Native American monitoring, but stated that Soboba monitors are available if other monitors could not be obtained.

The City also initiated Assembly Bill 52 (AB 52) consultation with the Native American groups who are traditionally and culturally affiliated with the geographic area of the proposed project, and who have requested such consultation in writing, including the San Luis Rey Band of Mission Indians, Rincon Band of Luiseño Indians and the Soboba Band of Luiseño Indians. The City mailed letters to the groups on August 26, 2015 inviting them to consult regarding potential impacts to tribal cultural resources. The Rincon Band of Luiseño Indians responded on October 6, 2015 requesting that "a Native American Monitor (preferably one that works for Rincon) will be present during all ground disturbing activities." The San Luis Rey Band of Mission Indians responded to the invitation and met with the City on August 28, 2015. The San Luis Rey Band stated that their representatives will provide the City with written information and mitigation measures regarding tribal cultural resources. On December 21, 2015, the San Luis Rey Band of Mission Indians submitted a request to the City requesting an extension on the comment period for the Draft MND, and requested continued consultation. The San Luis Rey Band of Mission Indians also provided Tribal Cultural Resource mitigation measures to be incorporated in the IS/MND. On February 8, 2016, the City and representatives from the San Luis Rey Band of Mission Indians met for a consultation meeting in which the City indicated it would be circulating the Draft IS/MND for public review again. The City also specified that the IS/MND would modify the mitigation measures for Tribal Cultural Resources to reflect the most current draft being discussed with the San Luis Rey Band of Mission Indians. On February 11, 2016, the City and the San Luis Rey Band of Mission Indians tribal representatives agreed on the final mitigation measures for Tribal Cultural Resources. Consequently, these mitigation measures would be incorporated into the MND and future projects as applicable. The recommendations presented at the end of this report incorporate these final mitigation measures developed with the San Luis Rey Band of Mission Indians.

A cultural resources survey of the Project APE was conducted on April 30, 2015 by Michael Vader. All accessible portions of the Project APE with visible ground surface were surveyed in a systematic manner with transect intervals spaced no greater than 5 meters (approximately 16.5 feet) apart.

One historic-period archaeological feature, MFRO-1, was documented as a result of this study. The feature consists of an approximate 2.5 foot square, fragmented concrete block inscribed with children's names, ages, and handprints with a date in the center. Resource MFRO-1 is recommended not eligible for listing in the National Register of Historic Places, California Register of Historical Resources, or the City of Escondido Local Register of Historic Resources, nor does it appear to be of exceptional significance. Therefore, MFRO-1 does not qualify as a historic property under Section 106 of the NHPA or a historical or unique archaeological resource under CEQA, and no further work or mitigation is recommended for this resource.

No other archaeological resources were identified in the Project APE as a result of archival research or survey, and significant archeological resources are not anticipated to be located within the Project APE. Although the NAHC SLF search results indicate that Native American cultural resources are known to be present within the vicinity of the Project APE, Native American respondents have not indicated that there are any known resources within the Project APE. In addition, the geoarchaeological review indicates that, if present, archaeological resources would

tend to be either on the surface, or shallowly buried and disturbed by past agricultural practices. Nevertheless, since the Project includes ground-disturbing activities, there remains a potential for discovery of subsurface archaeological deposits. Measures to ensure that the Project would result in **No Historic Properties Affected** under Section 106 of the NHPA and less than significant impacts to historical or unique archaeological resources under CEQA are provided at the close of this report in the *Conclusions and Recommendations* section.

CITY OF ESCONDIDO MFRO FACILITY FOR AGRICULTURE PROJECT

Phase I Cultural Resources Study

Introduction

Environmental Science Associates (ESA) has been retained by the City of Escondido (City) to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO Facility) for Agriculture Project (Project). The Project would include the construction of an MFRO Facility which would provide advanced treatment for Title 22 quality reuse water produced at the Hale Avenue Resources Recovery Facility (HARRF), a City-owned and operated recycled water treatment disposal facility located approximately 5 miles southeast of the Project. The treatment process would produce a high-quality water supply low in total dissolved solids (TDS) and chlorides to local avocado growers. Avocados producers are a vital part of Escondido's community and its economy, and water quality for avocado production is important for quantity and quality of production. Water must be low in TDS and chlorides to avoid leaf burn, root rot, and the need for excessive flushing. The MFRO Facility would utilize membrane filtration (i.e. microfiltration [MF] or ultrafiltration [UF] membranes) and reverse osmosis (RO) technologies to produce 2.0 million gallons of treated water per day that would be sent through non-potable reuse water/agriculture pipelines and distributed to avocado growers.

The Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The EPA established a process, known as California Environmental Quality Act (CEQA)-Plus, for SWRCB to administer the SRF Loan Program in compliance with federal statutes. This Phase I cultural resources study has been prepared in support of the IS/MND in compliance with CEQA-Plus guidelines. The City is the lead agency responsible for compliance with CEQA-Plus.

ESA personnel involved in the preparation of this study include: Monica Strauss, M.A., R.P.A., Project Director; Candace Ehringer, M.A., R.P.A., Principal Investigator; Michael Vader, B.A., report author and surveyor; Chris Lockwood, Ph.D., R.P.A, geoarchaeologist; and Jason Nielsen, GIS specialist. Resumes of key personnel are provided in **Appendix A**.

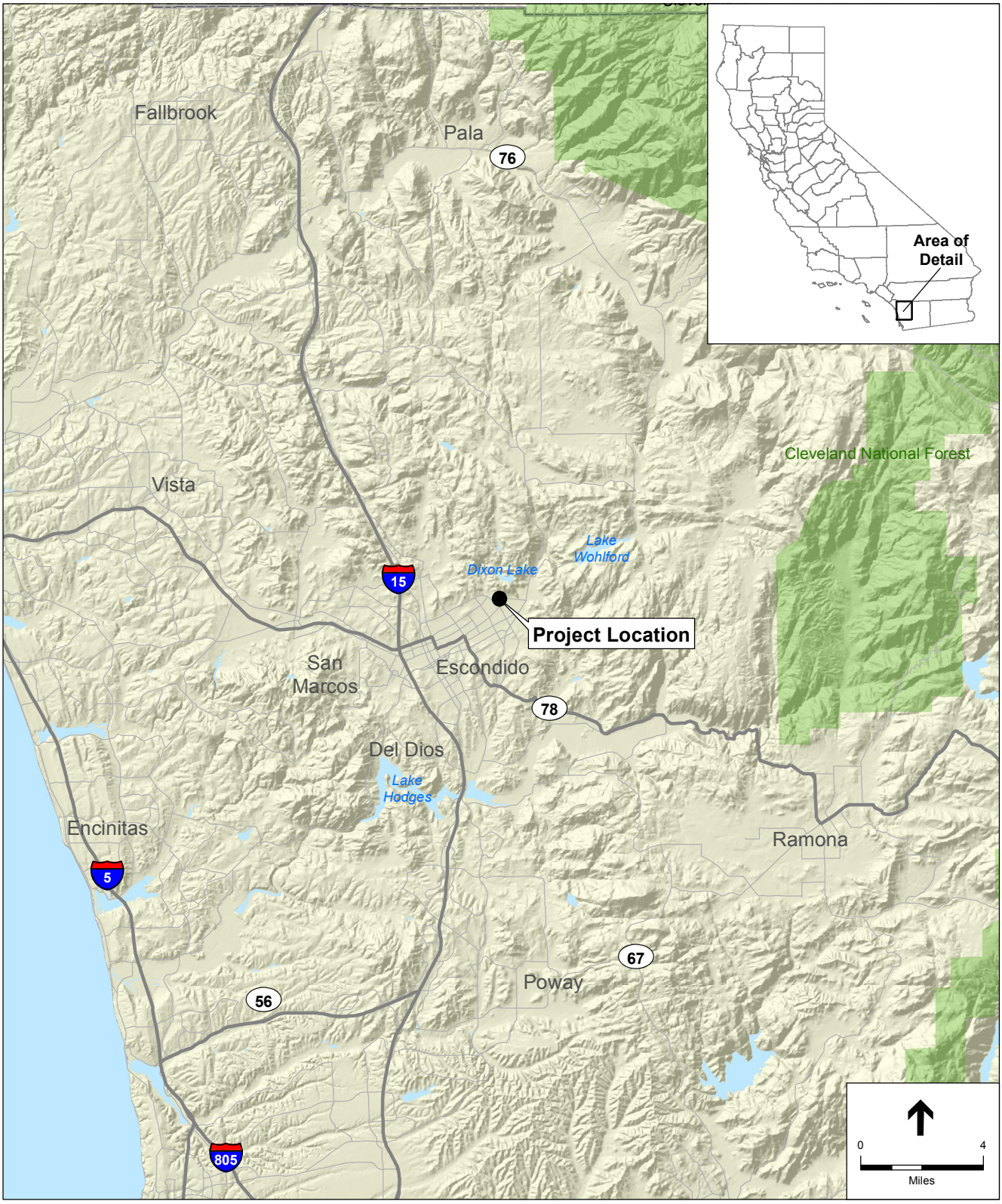
Project Location

The 3.22-acre Project site is located within the City of Escondido, in northwest San Diego County (**Figure 1**). Specifically, the Project is located within Assessor's Parcel Number (APN) 225-27-05-400, northwest of East Washington Avenue between North Citrus Avenue and East El Norte Parkway within the eastern portion of Escondido in an un-sectioned portion of the Valley Center 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle (**Figure 2**).

Project Description

The Project is part of the larger Potable Reuse Water Program (Reuse Program), which the City has elected to implement in order to delay or defer wastewater effluent outfall improvement requirements through the year 2050, to expedite a new, high-quality water supply to local agricultural growers, and to help promote and support the local economy and agriculture. The Reuse Program includes a pipeline extension from the existing reuse supply system to a decentralized treatment site (Decentralized Site), the development of a brine reject waste return pipeline from the Decentralized Site to the HARRF, and a new agriculture reuse conveyance and distribution system. The Decentralized Site would be comprised of the MFRO Facility, as well as an Advanced Water Treatment Facility (AWT Facility). The AWT Facility would be constructed at a later, undetermined date and is not included as part of this Project.

The Project would include the construction of the MFRO Facility, which would provide advanced treatment for Title 22 quality reuse water produced at HARRF, located approximately 5 miles southeast of the MFRO Facility. The treatment process would produce a high-quality water supply low in total TDS and chlorides more suitable for local avocado production. The MFRO facility would utilize membrane filtration (i.e. MF or UF) and RO technologies. Since the treated Title 22 quality reuse water (permeate) produced at the MFRO Facility would be of a better quality than what is required for agriculture purposes, the permeate would be blended on-site with untreated Title 22 quality reuse water from HARRF. A 15,500-foot long, 24-inch diameter influent pipeline, not included as part of this Project, would convey HARRF Title 22 quality reuse water from the existing reuse system to the MFRO Facility. The influent pipeline would enter the Project site from East Washington Avenue and would branch onsite to supply flows to the MFRO Facility treatment system and to a below grade storage tank where the permeate would be blended with the Title 22 quality reuse water. An agriculture reuse distribution system, not included as part of this Project, would be constructed in several phases and would include a product pipeline to convey the blended permeate (product) to avocado growers, based on the assumption that the 1.2 million gallon potable water reservoir, Hogback Reservoir, would be converted to agriculture reuse storage.

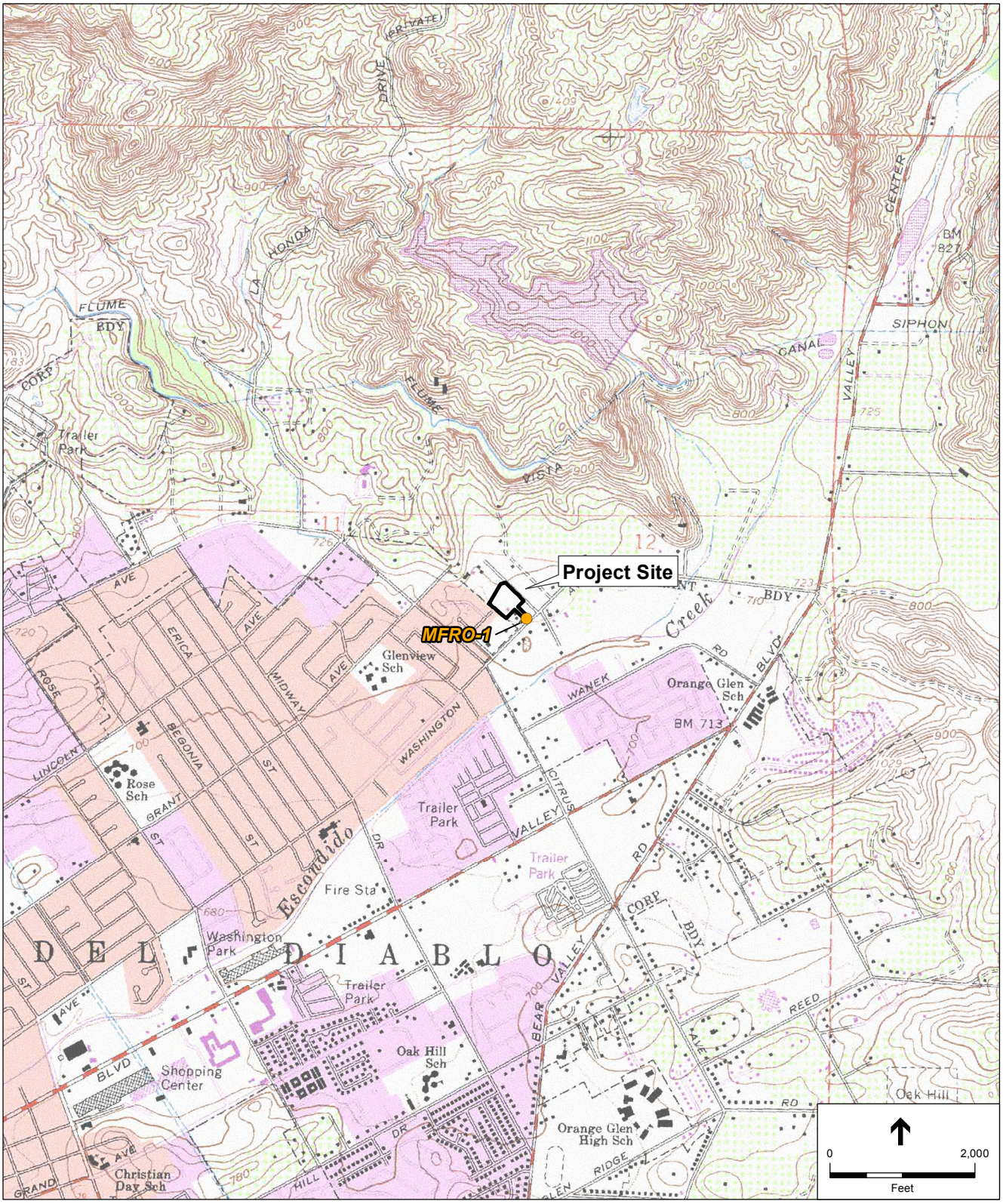


SOURCE: ESRI.

Escondido MFRO Facility Project . 140480.02

Figure 1

Regional Location



SOURCE: USGS Topoquad: Valley Center

Escondido MFRO Facility Project . 140480.02

Figure 2

Project and Resource Location

MRFO Facility

Alternative site plans (Alternatives 1A and 1B) have been developed for the MFRO Facility. Alternative 1A generally locates the facility to the east side of the Project site, whereas Alternative 1B is located to the west (**Figure 3**). The alternative MFRO Facility layouts are based on preliminary equipment, storage and building footprint requirements, and other site considerations. Based on Development Standards, the MFRO Facility structures would be limited to a maximum height of 35 feet. The Project includes the construction of the following components as part of the MFRO Facility.

Facilities Building

A facilities building would be constructed to protect membrane equipment from inclement weather and would measure approximately 130 feet long by 75 feet wide, and cover an area of approximately 9,750 square feet. The building would be comprised of a steel structure, which would support walls and roofs made of modular sheets of corrugated steel. Standard translucent panels would be distributed on the roof to provide controlled natural light. The building would be treated with a stucco façade and architectural details to match neighboring building architecture. The building would be divided into four rooms: an equipment room to house the MF and RO equipment; electrical room; control room; and storage room. A single restroom will also be provided. High-pressure RO feed pumps would be located indoors due to noise concerns. Mechanical piping would be located in a grate-covered concrete pipe trench or on an overhead pipe gallery.

Influent MFUF Feed Tank

An influent microfiltration/ultrafiltration (MFUF) feed tank would be installed to ensure an uninterrupted supply of Title 22 quality reuse water received from the HARRF via an existing pipeline. The feed tank would be 25 feet wide by 16 feet tall, and would have a capacity of 57,000 gallons. Installation of the above grade tank would require an approximate 75-foot long by 25-foot wide construction footprint.

MFUF Feed Pump Station and Strainers

Two horizontal centrifugal feed pumps would be constructed to transfer water from the MFUF feed storage tanks to the MFUF system. The pumps would provide the required driving pressure across the MFUF membrane modules to produce filtrate under variable conditions. Each pump would have a capacity of 950 gallons per minute (gpm) and would be equipped with a variable speed drive to control the pump speed, maintaining a fixed pressure in the delivery pipeline. Prior to entering the MFUF system, the feed water would be passed through three self-cleaning automatic strainers designed to remove large particles and debris that could potentially damage the MFUF membranes.

MFUF System

The MFUF system would be composed of MF or UF membranes that would remove suspended or colloidal solids as a pretreatment process. The MFUF pretreatment would provide a stable, high-quality feed stream for the RO systems, while minimizing colloidal and fouling of RO membranes. The membranes would be installed within vertical pressure vessels, arranged in racks

and placed on a concrete slab. The MFUF system would be provided with a complete clean-in-place (CIP) system to clean and condition the membranes. The CIP system consists of chemical addition, air scour, and reverse filtration pumping systems and the associated piping and controls.

MFUF Permeate Inter-Process Storage Tank

One 53,000 gallon inter-process storage tank would be constructed between the MFUF and RO systems to equalize the MFUF filtrate flows prior to being fed to the RO systems. The inter-process storage tank would also provide filtrate supply for the MFUF system reverse filtration (backwash) pumps. The storage tank would have dimensions of 24 feet wide by 16 feet high, with a 53,000 gallon capacity. The installation of the inter-process tank would require a construction footprint measuring 83 feet long by 20 feet wide by 20 feet deep.

RO Transfer Pump Station and Cartridge Filters

Two horizontal end suction centrifugal transfer pumps would pump MFUF filtrate from the inter-process storage tank through a set of cartridge filters. The cartridge filters would consist of wound hollow core polypropylene elements and would protect the RO membranes from long-term solids deposition.

RO Feed Pump Station

Two vertical turbine-type feed pumps would boost the pressure of the RO feed water to the RO membranes. To allow for different operating conditions on individual membrane trains, as determined by the degree of membrane fouling, each RO train would be served by its own feed pump and would have a capacity of 868 gpm.

RO System

An RO system would be constructed to remove dissolved constituents from the filtrate received from the MFUF system. Permeate produced by RO vessels will be combined into one permeate stream. The RO system would include: two trains; 36 pressure vessels per train; 24 Stage 1 pressure vessels; 12 Stage 2 pressure vessels; seven membrane elements per vessel; 252 membrane elements per train (400 square feet each); one 5,000 gallon, vertical cylindrical flat top CIP tank; two 120 kilowatt CIP heaters; and two (1 duty, 1 standby) horizontal centrifugal RO CIP pumps with capacities of 1,200 gpm.

RO Flush System

An RO flush system would be constructed to provide permeate to flush the membranes within the RO trains should they be shut down and remain offline for a period of 30 minutes or more. The RO flush system would be a low pressure process designed to activate automatically following a shut down in order to flush the membranes, keeping them from fouling when brought back online. Operators could also manually initiate flushing of an offline train. The flush system would include on flat top vertical tank with a capacity of 5,100 gallons, and two horizontal centrifugal pumps with 770 gallon capacities.

Alternate 1A

Alternate 1B

0 100
Feet

MFRO Facility

SOURCE: Black & Veatch

Escondido MFRO for Agriculture Project . 140480

Figure 3
MFRO Facility Site Plans

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Product Storage Blend Tank

A cast-in-place concrete underground storage blend tank with an 800,000 gallon capacity would be installed for the storage of blended permeate and Title 22 quality reuse water. The blending would be carried out by either an inline static mixer, reservoir mixer, or storage tank weir blend box. Installation of the below grade tank would require an approximate 75-feet long by 25-feet wide construction footprint. The depth of the product storage blend tank has not yet been determined and will be based on the results of geotechnical investigations to be completed at future date.

Agriculture Pump Station

An agriculture pump station would be constructed to pump the blended product to the Hogback Reservoir via the future agriculture reuse distribution system. The pump station would consist of five pumps (four duty and one standby), each rated for 1,820 gpm to meet ultimate summer demands. The pumps would be vertical turbine diffusion vane pumps, well-mounted on top of the buried blend storage tank.

Onsite Pipeline Corridor

A pipeline corridor would be constructed on site along the access route and would house pipelines entering the Project site from Washington Avenue, including the HARRF reuse influent pipeline, brine/reject waste return pipeline, and agriculture supply pipeline, as well as potable water, storm drain, fiber optic, and electrical conduit. Trenching for the corridor would be 4 feet wide with a maximum depth of 8.5 feet.

Chemical Feed and Storage Facilities

The Project would require chemical feed and storage facilities located outside the facilities buildings with separate containment areas. Chemical storage would be supplied by a combination of totes and permanent tanks. Storage totes would be removed and replaced when empty. Permanent tanks would be filled when empty.

Security Wall and Fencing

The Project would include security walls and fencing. A temporary chain link fence would be installed along the northern boundary. Block walls would be constructed along the western and southern boundaries, with ornamental fencing along the access road to Washington Avenue. An existing block wall located between the Project site and residential property on the eastern boundary would remain in place.

Area of Potential Effects

A historic architectural/archaeological Area of Potential Effects (APE) was established for the Project according to Section 106 of the NHPA in coordination with the City (**Figure 4**). An APE is defined as:

> …the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 Code of Federal Regulations [CFR] 800.16[d]).

The horizontal APE encompasses the 3.22-acre Project footprint, which includes the entirety of APN 225-27-05-400. The vertical APE includes the anticipated maximum depth of ground disturbance of 20 feet below ground surface and the maximum height of the MFRO Facility of 35 feet above ground surface.

Setting

Environmental Setting

The Project is located on an approximate 3.22-acre vacant lot in a developed and urbanized portion of Escondido, within the middle basin of the Escondido Creek watershed, which includes the area downstream from Lake Wohlford Dam, located approximately 2.75 miles northeast of the Project APE, to the lower end of San Elijo Canyon, and located approximately 8.75 miles southwest of the Project APE (Carlsbad Watershed Network, 2004). The Project APE lies at the interface of the northern portion of the middle basin, which is characterized by rugged undeveloped hills, and the center portion of the middle basin which is broad and flat and occupied by the urban development associated with the City (Carlsbad Watershed Network, 2004). Prior to urban development, the Project APE was used primarily for agricultural purposes including cattle grazing and the cultivation of orchards.

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 general 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 technology, particular artifacts, economic systems, trade, burial practices, and other aspects of culture.

SOURCE: ESRI

Escondido MFRO Facility Project . 140480.02

Figure 4

Area of Potential Effects

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 remains 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). 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 (Horne and McDougall, 2003).

The primary Early Holocene cultural complex in coastal southern California was the San Dieguito Complex. The people of the San Dieguito Complex (about 10,000–8,000 B.P.) inhabited the chaparral zones of southwestern California, exploiting the plant and animal resources of these ecological zones (Moratto, 1984; Warren, 1967). Leaf-shaped and large-stemmed projectile points 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 for the increased importance of hunting (Horne and McDougall, 2003). The processing of plant foods, particularly acorns, increased, a wider variety of animals were hunted, and trade with neighboring regions intensified (Horne and McDougall, 2003). 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.

The Middle Holocene La Jolla Complex (about 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 grinding of seeds for flour, as indicated by the abundance of millingstones in the archaeological record, appears (Horne and McDougall, 2003).

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. 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). In coastal southern California, conditions became dryer and many lagoons had been transformed into saltwater marshes. Because of this, populations abandoned 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 during this time period, with asphaltum (tar), seashells and steatite being traded from southern California to the Great Basin.

Ethnographic Setting

Luiseño

The Luiseño were named after the Mission San Luis Rey, to which many of them were relocated. The language of the Luiseño people has been identified as belonging to the Cupan group of the Takic subfamily, which is part of the larger Uto-Aztecan language family (Bean and Shipek, 1978). Luiseño territory was bordered by Agua Hedionda Creek on the south and Aliso Creek on the northwest, encompassed most of the drainage of the San Luis Rey River and the Santa Margarita River, and extended east as far as the San Jacinto Mountains. Today this area is located within northern San Diego, southern Orange, and Riverside counties, and would have encompassed a diverse environment including lagoons and marshes, coastal areas, inland river valleys, foothills, and mountains.

The Luiseño subsisted on small game, coastal marine resources, and a wide variety of plant foods such as grass seeds and acorns. Luiseño houses were conical thatched reed, brush, or bark structures. The Luiseño inhabited permanent villages centered around patrilineal clans, with each village headed by a chief(Sparkman, 1908). Seasonal camps associated with villages were also used. Each village or clan had an associated territory and hunting, collecting, and fishing areas. Villages were typically located in proximity to a food or water source, or in defensive locations, often near valley bottoms, streams, sheltered coves or canyons, or coastal strands (Bean and Shipek, 1978). It is estimated that there may have been around 50 Luiseño villages with a population of about 200 each at the time of the first Spanish contact (Bean and Shipek, 1978).

Today, there are six federally recognized tribes in California who share Luiseño tribal affiliation, language, and culture, including the La Jolla Band of Luiseño Indians (La Jolla), Rincon Band of Luiseño Indians (Rincon), Pauma Yuima Band of Mission Indians (Pauma), Pechanga Band of Luiseño Indians (Pechanga), Pala Band of Mission Indians (Pala), and Soboba Band of Luiseño Indians (Soboba).

Kumeyaay

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, Ewiiaapaayp, 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.

Historic Setting

The first European presence near present day San Diego came in 1542, when Juan Rodriguez Cabrillo led an expedition along the coast. Europeans did not return until 1769, when the expedition of Gaspar de Portola traveled overland from San Diego to San Francisco. In the late 18th century, the Spanish began establishing missions in California and forcibly relocating and converting native peoples (Horne and McDougall, 2003). The nearest mission to the Project APE was Mission San Luis Rey de Francía (San Luis Rey), founded in 1798 by Father Fermín de Francisco Lasuén de Arasqueta.

Disease and hard labor took a toll on the native populations; by 1900, the Native Californian population had declined by as much as 95 percent (Chartkoff and Chartkoff, 1984). In addition, native economies were disrupted, trade routes were interrupted, and native ways of life were significantly altered.

In 1821, Mexico, which included much of present-day California, became independent from Spain, and during the 1820s and 1830s the California missions were secularized. Mission property was supposed to have been held in trust for the Native Californians, but instead was handed over to civil administrators and then into private ownership. After secularization, many former Mission Indians were forced to leave the Missions and seek employment as laborers, ranch hands, or domestic servants (Horne and McDougall, 2003).

In 1848, gold was discovered in California, leading to a huge influx of people from other parts of North America. In 1850, California became part of the United States of America. The opening of the Butterfield Overland Stage route in 1858 and later the California Southern Railroad line in 1882 greatly increased the number of people coming to southern California.

City of Escondido

In 1834, a 12,653-acre land grant, known as the Rincon del Diablo Rancho, or “corner of the devil,” located within the Escondido Valley, was granted to Juan Bautista Alvarado of San Diego. The land grant was so named because, during the Mission period, the Escondido Valley was not administered by either the San Diego or San Luis Rey missions, and such lands were believed to be outside the realm of the church (Escondido History Center, 2011). Alvarado constructed a large adobe overlooking the Escondido Valley and raised cattle for the hide and tallow trade. Alvarado transported his hides to the port of San Diego, a major depot for the hide trade, to be traded with Boston merchants for manufactured goods such as guns, powder, hardware, toilet articles, woolens, cotton goods, boots, and shoes. In the early 1850s, Juan and his wife died and

their children each sold their shares of the rancho to a San Diego judge named Oliver S. Witherby (Escondido History Center, 2011).

It took Judge Witherby a decade to acquire full title to the land from Alvarado's many heirs. Though once acquired, Witherby set to work farming and raising cattle on the land. Witherby's interest in Rancho Rincon del Diablo went beyond ranching and agriculture; he envisioned the land's true economic potential lay in its proximity to the Mormon Colony located in the San Bernardino Valley 70 miles to the north (Stanford, 1978). The colony provided a gateway to Salt Lake City and the east, and Judge Witherby predicted that a road would be constructed from the Mormon Colony to the port of San Diego, and that the thoroughfare would pass through his ranch making it an important economic hub (Stanford, 1978). Witherby's gamble didn't pay off when the Mormon Colony's economic activities gravitated toward the markets in Los Angeles. By 1868, Witherby was short of money and sold his rancho to Edward McGeary and the three Wolfskill brothers, John, Matthew and Josiah (Escondido History Center, 2011)

McGeary and the Wolfskill brothers shifted the economic activities of the rancho from cattle ranching to sheep ranching. In 1883, the ranch was sold to The Stockton Company for $128,138.70 (Escondido History Center, 2011). A year later The Stockton Company transferred its interest in the valley to The Escondido Company, which planted large vineyards of Muscat grapes. In March 1886, The Escondido Company deeded the ranch to the Escondido Land & Town Company for $104,042 (Escondido History Center, 2011). The Escondido Land & Town Company subdivided the land and planted vineyards and citrus groves and constructed the 100-room Escondido Hotel. In addition, the company gave free land to religious organizations and within a short period of time Escondido had seven churches (Escondido History Center, 2011).

In 1887, the Escondido Land & Town Company invested in the construction of a rail line that connected Escondido to the town of Oceanside, located approximately 18 miles to the northwest (Escondido History Center, 2011). The rail line transported the agricultural products of the Escondido Valley to outside markets and stimulated settlement in the region. In 1887, the Santa Fe Depot was built on the west end of Grand Avenue and remained in operation until 1945 (Escondido History Center, 2011).

In 1886, the Escondido Land & Town Company drilled several wells to irrigate the groves that they planted. The next year the Escondido Irrigation District was formed to build a reservoir. In 1888, the City of Escondido was incorporated with a population of 249. In 1890, the City passed a bond issue for $450,000 to construct a ditch line and dam to bring water from the San Luis Rey River to the Bear Valley watershed above present day Lake Wohlford, located approximately 2.75 miles northeast of the Project APE (Escondido History Center, 2011). In 1895, the ditch line and dam were completed, providing local farmers access to irrigation water and facilitating expansion of the valley's citrus industry.

In 1950, Highway 395 connected Escondido to the ever expanding City of San Diego, located approximately 30 miles to the southwest. During the Cold War of the 1950s, the City and County of San Diego expanded as military defense spending increased and the demand for affordable housing skyrocketed. To meet the increased demand for new housing many of Escondido's

vineyards and citrus orchards were transformed into housing subdivisions (Escondido History Center, 2011). With the decline of the agricultural industry, Escondido became, in some respects, a bedroom community of San Diego.

Regulatory Framework

Federal

Section 106 of the National Historic Preservation Act

Archaeological resources are protected through the NHPA of 1966, as amended (16 USC 470f), and its implementing regulation, Protection of Historic Properties (36 CFR Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Prior to implementing an "undertaking" (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation and the State Historic Preservation Officer (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register of Historic Places (National Register). As indicated in Section 101(d)(6)(A) of the NHPA, properties of traditional religious and cultural importance to a tribe are eligible for inclusion in the National Register. Under the NHPA, a resource is considered significant if it meets the National Register listing criteria at 36 CFR 60.4.

National Register of Historic Places

The National Register was established by the NHPA of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2). The National Register recognizes both historic-period and prehistoric archaeological properties that are significant at the national, state, and local levels.

To be eligible for listing in the National Register, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (U.S. Department of the Interior, 2002):

A. Are associated with events that have made a significant contribution to the broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for National Register listing (U.S. Department of the Interior, 2002).

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior, 2002). The National Register recognizes seven qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

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. An archaeological resource may qualify as an "historical resource" under CEQA. The *CEQA Guidelines* (Title 14 California Code of Regulations [CCR] Section 15064.5) recognize that an historical resource includes: (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 a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired) in the significance of an historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (*CEQA Guidelines* Sections 15064.5(b)(1), 15064.5(b)(4)).

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)).

CEQA-Plus

The EPA sponsors the SRF Loan Program to provide funding for construction of publicly-owned treatment facilities and water reclamation projects. This funding for capital improvements to wastewater treatment and water recycling facilities is authorized under the federal Clean Water Act. In order to comply with requirements of the SRF Loan Program, which is administered by the SWRCB in California, a CEQA document must fulfill additional requirements known as CEQA-Plus. The CEQA-Plus requirements have been established by the EPA and are intended to supplement the *CEQA Guidelines* with specific requirements for environmental documents acceptable to the SWRCB when reviewing applications for wastewater treatment facility loans. They are not intended to supersede or replace *CEQA Guidelines*.

The EPA's CEQA-Plus requirements have been incorporated into the SWRCB's *Environmental Review Process Guidelines for SRF Loan Applicants* (2004). The SWRCB's *SRF Guideline*s require that a proposed project comply with Section 106 of the NHPA.

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.

Local

City of Escondido

General Plan

The City of Escondido General Plan, Conservation Element (2012), contains the following historic resources goal and policies relevant to the proposed Project:

Goal 5: Preservation of important cultural and paleontological resources that contribute to the unique identity and character of Escondido.

> **Cultural Resources Policy 5.1:** Maintain and update the Escondido History Sites survey to include significant resources that meet local, state, or federal criteria.
>
> **Cultural Resources Policy 5.2:** Preserve significant cultural and paleontological resources listed on the national, State, or local registers through: maintenance or development of appropriate ordinances that protect, enhance and perpetuate resources; incentive programs; and/or the development review process.
>
> **Cultural Resources Policy 5.3:** Consult with appropriate organization and individuals (e.g., South Coastal Information Center [SCIC] of the California Historical Resources

Information System [CHRIS], NAHC, Native American groups and individuals, and San Diego Natural History Museum) early in the development process to minimize potential impacts to cultural and paleontological resources.

Cultural Resources Policy 5.4: Recognize the sensitivity of locally significant cultural resources and the need for more detailed assessments through the environmental review process.

Cultural Resources Policy 5.5: Preserve historic buildings, landscapes, and districts with special and recognized historic or architectural value in their original locations through preservation, rehabilitation (including adaptive reuse), and restoration where the use is compatible with the surrounding area.

Cultural Resources Policy 5.6: Review proposed new development and/or remodels for compatibility with the surrounding historic context.

Cultural Resources Policy 5.7: Comply with appropriate local, State, or federal regulations governing historical resources.

Escondido Municipal Code Article 40: Historic Resources

The City of Escondido has established a local register of historic resources (local register) as well as local landmarks. Section 33-794 of Article 40 of the Escondido Municipal Code provides the following guidance on the criteria for local register listing and local landmark designation:

> Prior to granting a resource local register or historical landmark status, the City council shall consider the definitions for historical resources and historical districts and shall find that the resource conforms to one (1) or more of the criteria listed in this section. A structural resource proposed for the local register shall be evaluated against criteria number one (1) through seven (7) and must meet at least two (2) of the criteria. Signs proposed for the local register shall meet at least one (1) of the criteria numbered eight (8) through ten (10). Landscape features proposed for the local register shall meet criterion number eleven (11). Archaeological resources shall meet criterion number twelve (12). Local register resources proposed for local landmark designation shall be evaluated against criterion number thirteen (13). The criteria are as follows:
>
> (1) Escondido historical resources that are strongly identified with a person or persons who significantly contributed to the culture, history, prehistory, or development of the City of Escondido, region, state or nation;
>
> (2) Escondido building or buildings that embody distinguishing characteristics of an architectural type, specimen, or are representative of a recognized architect's work and are not substantially altered;
>
> (3) Escondido historical resources that are connected with a business or use that was once common but is now rare;

(4) Escondido historical resources that are the sites of significant historic events;

(5) Escondido historical resources that are fifty (50) years old or have achieved historical significance within the past fifty (50) years;

(6) Escondido historical resources that are an important key focal point in the visual quality or character of a neighborhood, street, area or district;

(7) Escondido historical building that is one of the few remaining examples in the city possessing distinguishing characteristics of an architectural type;

(8) Sign that is exemplary of technology, craftsmanship or design of the period when it was constructed, uses historical sign materials and is not significantly altered;

(9) Sign that is integrated into the architecture of the building, such as the sign pylons on buildings constructed in the Modern style and later styles;

(10) Sign that demonstrates extraordinary aesthetic quality, creativity, or innovation;

(11) Escondido landscape feature that is associated with an event or person of historical significance to the community or warrants special recognition due to size, condition, uniqueness or aesthetic qualities;

(12) Escondido archaeological site that has yielded, or may be likely to yield, information important in prehistory;

(13) Escondido significant historical resource that has an outstanding rating of the criteria used to evaluate local register requests. (Ord. No. 2000-23, § 4, 9-13-00; Ord. No. 2008-16, § 4, 7-16-08)

Archival Research

SCIC Records Search

A records search for the Project was conducted on March 16, 2015 at the SCIC housed at San Diego State University. The records search included a review of all recorded cultural resources within a ½-mile radius of the Project APE, as well as a review of cultural resource reports on file. The Historic Properties Directory was also examined for any documented historic-period built resources within or adjacent to the Project APE. The results of the SCIC records search are included in **Appendix B** *(Confidential, Bound Separately)*.

Previous Cultural Resources Investigations

A total of 12 cultural resources studies have been conducted within a ½-mile radius of the Project APE (**Table 1**). Approximately 25 percent of the records search radius has been included in previous cultural resources surveys. Of the 12 previous studies, two (SD-08099 and -08818)

include portions of the Project APE. Approximately 50 percent of the Project APE has been included in previous cultural resources surveys.

TABLE 1
PREVIOUS CULTURAL RESOURCES INVESTGIATIONS WITHIN 1/2 MILE OF THE PROJECT APE

Author	SCIC # (SD-)	Title	Date
Affinis	07848	*Historic Property Survey Report Bear Valley/East Valley Parkways, Escondido, San Diego County, CA*	2001
City of Escondido	08588	*Draft Environmental Impact Report for Expansion of Wastewater Treatment Facility*	1980
Fink, Gary R.	00691	*Archaeological Survey for the Proposed Realignment of Valley Center Road, Valley Center, California*	1974
Fulmer, Scott	04274	*Request for Determination of Effect CA-SDI-5589*	1984
Fulmer, Scott	04276	*Request for Determination of Eligibility for Inclusion in the National Register of Historic Places SDI-5589*	1984
Hector, Susan M.	10432	*Cultural Resources Sensitivity Analysis for the Carryover Storage and San Vicente Dam Raise Project (CSP) Alternatives Analysis*	2006
Kyle, Carolyn	08099*	*Cultural Resource Survey for the Washington Hills Project, City of Escondido, California*	2003
Kyle, Carolyn	08818*	*Cultural Resource Survey for the Washington Hills Project, City of Escondido, California*	2003
Mason, Roger, Evelyn Chandler, and Cary Cotterman	09620	*Cultural Resources Record Search and Field Report for a Verizon Telecommunications Facility: Woods Valley, Escondido, San Diego County, California*	2005
Pierson, Larry J.	09682	*Results of Archaeological Monitoring at the Washington Hills Project, Escondido, California*	2005
Robbins-Wade, Mary, Andrew Giletti, and Stephen Van Wormer	12655	*Historic and Archaeological Resources Survey, Vista Flume Study, Vista, San Marcos, and Escondido, San Diego County, California*	2009
Smith, Brian F.	09706	*An Archaeological/Historical Survey for the Henry Ranch Project Escondido, California*	2005

* Indicates study overlaps the Project APE

Previously Recorded Cultural Resources

The records search indicated that 17 cultural resources have been previously recorded within a ½-mile radius of the Project APE (**Table 2**). These resources include: four prehistoric archaeological sites (CA-SDI-016446, -016447, -016448, and -017306), three historic-period archaeological sites (CA-SDI-016500, -017597, and -017658), and ten historic-period built resources (P-37-018731, -018733, -030889 [Vista Irrigation Bench Flumes], 1032 Paula Way, 2115 East Lincoln Avenue, 2196 Montemar Avenue, 2225 East Lincoln Avenue, 2237 East Lincoln Avenue, 2421 East Washington Avenue, 2739 East Washington Avenue). No resources have been previously recorded within or immediately adjacent to (within 50 feet of) the Project APE.

TABLE 2
PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN ½-MILE OF THE PROJECT APE

Primary # (P-37)	Trinomial (CA-SDI-)	Other Designation	Description	Date Recorded
018731	-	902 North Citrus Avenue	Historic-period architectural resources consisting of a Moderne-style residence constructed in the 1930s	1983
018733	-	823 North Citrus Avenue	Historic-period architectural resource consisting of a Shingle-style Victorian farmhouse constructed in the 1900s	1983
024815	016446	-	Prehistoric archaeological site consisting of a single bedrock milling feature	2003
024816	016447	-	Prehistoric archaeological site consisting of a single bedrock milling feature	2003
024817	016448	-	Prehistoric archaeological site consisting of multiple bedrock milling features on a single outcrop	2003
024929	016500	Cochran-Grafton Homestead Site	Historic-period archaeological site consisting of the remnants of a ranching homestead occupied between 1890 and 1950	2003
026347	017306	Henry Ranch Temp 1	Prehistoric archaeological resources consisting of a bedrock milling feature that has been moved from its original location	2005
026910	017597	Washington Hills Temp 1	Historic-period archaeological site consisting of discrete locations of domestic items dating from the 1920s through the 1950s discovered during monitoring	2005
026976	017658	Washington Hills Temp 2	Historic-period archaeological site consisting of discrete locations of domestic items dating from the 1920s through the 1950s discovered during monitoring	2005
030889	-	Vista Irrigation Bench Flumes	Historic-period built resources consisting of a series of bench flumes constructed in 1926	2009
-	-	1032 Paula Way	Historic-period architectural resource	-
-	-	2115 East Lincoln Avenue	Historic-period architectural resource consisting of a Victorian-style residence with Greek Revival elements constructed in 1900	-
-	-	2196 Montemar Avenue	Historic-period architectural resource	-
-	-	2225 East Lincoln Avenue	Historic-period architectural resource consisting of a California Bungalow constructed in 1930	-
-	-	2237 East Lincoln Avenue	Historic-period architectural resource consisting of a California Bungalow constructed in 1930	-
-	-	2421 East Washington Avenue	Historic-period architectural resources consisting of a Bungalow constructed in 1930	-
-	-	2739 East Washington Avenue	Historic-period architectural resource constructed in 1886	-

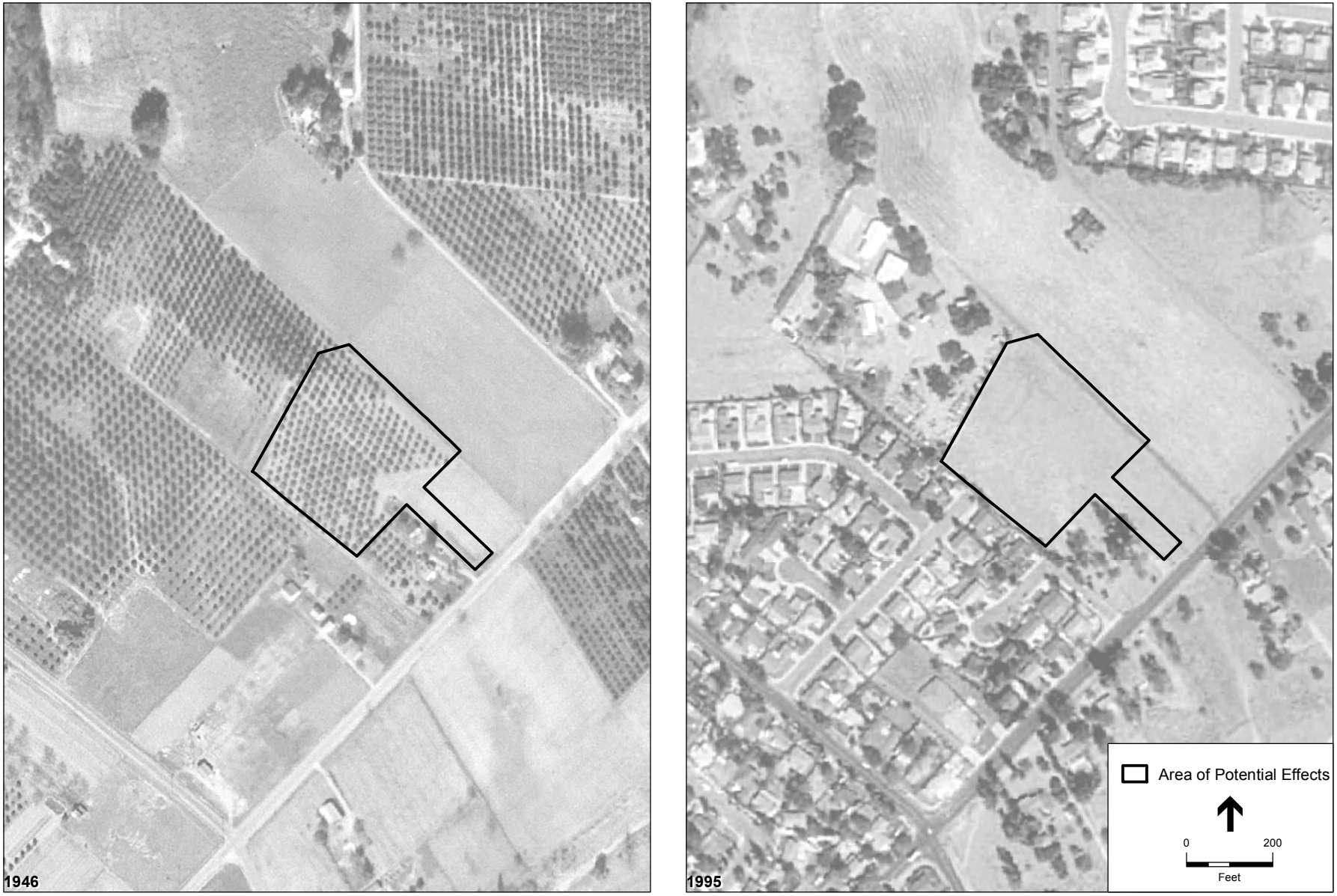
Historic Map and Aerial Review

Historic maps and aerial photographs were examined in order to provide historical information about the Project APE and to contribute to an assessment of the Project APE's archaeological sensitivity. Available maps include: the 1876 and 1885 U.S. Surveyor General's survey plat of Township 12 South, Range 2 West; the 1893 and 1901 Escondido 15-minute topographic quadrangles; the 1901 San Luis Rey 30-minute topographic quadrangle; and the 1948 and 1968 Valley Center 7.5-minute topographic quadrangle. Historic aerial photographs of the Project APE from 1946, 1953, 1964, 1980, 1995, 2005, and 2012 were also examined (historicaerials.com, 2015). In addition, Sanborn Fire Insurance maps from 1892, 1896, 1907, 1911, 1927, and 1949 were reviewed; however, the maps did not include the Project APE or its immediate vicinity.

The available historic maps and aerial photographs indicate that the Project APE and surrounding area was largely used for agricultural purposes throughout the 20th century, and did not become urbanized until the latter quarter of the century. The 1876 and 1885 U.S. Surveyor General's survey plat maps show the Project APE as being located within the Rancho Rincon del Diablo, which was located between Rancho Los Vallecitos de San Marcos to the northeast and Rancho San Bernardo to the south. The plat maps do not indicate many landmarks or features within the vicinity of the Project APE; however, a cabin and the Wolfskills' ranch headquarters are shown within the bounds of Rancho Rincon del Diablo, approximately 0.50 miles and 2.75 miles northeast of the Project APE, respectively.

The 1893 and 1901 Escondido 15-minute topographic maps, as well as the 1901 San Luis Rey 30-minute topographic map, show the Project APE as being located at the base of a series of hills, approximately 2.25 mile northeast of Escondido and 0.30 mile north of Escondido Creek. The maps show that the southern portion of the Project APE bounded by a generally northeast-southwest oriented road that corresponds to present-day East Washington Avenue and that a number of structures are located in the immediate vicinity of the Project APE. The 1948 Valley Center 7.5-minute topographic map indicates a greater density of structures in the vicinity of the Project APE, and shows the land use around the Project APE consisted mostly of orchards. Present-day Citrus Avenue is also shown southwest of the Project APE. The 1969 Valley Center 7.5-minute topographic map shows a greater density of structures and streets in the immediate vicinity of the Project APE, indicating the growth of Escondido.

The 1946 historic aerial photographs indicate that the Project APE consisted of orchards, with a series of structures immediately adjacent to the south-central portion of the Project APE and connected to East Washington Avenue by a driveway (**Figure 5**). The 1953 aerial shows the same group of structures, but the orchards noted previously had been removed. The 1964 aerial depicts some additional small structures within the south-central portion of the Project APE. The 1980 aerial photograph shows a residential development along the southwestern boundary of the Project APE, and a northeast-southwest trending fence line marks the northwest boundary of the Project APE. Several structures are depicted in the central portion of the Project APE.



SOURCE: Historic Aerials

Escondido MFRO Facility Project . 140480.02

Figure 5

1946 and 1995 Historic Aerials

The 1995 aerial photograph shows that the group of structures located in the central portion of the Project APE is no longer present and a number of housing developments had been constructed to the west and south of the Project APE (see Figure 5). The 2012 aerial photograph indicates that the Project APE is vacant, but surrounded by residential development with the newly constructed El Norte Parkway bounding its northeastern corner.

In sum, the historic map and aerial photograph review indicates that the immediate vicinity around the Project APE was largely used for agricultural purposes for the first three-quarters of the 20th century, with residential developments appearing by the 1980s. The Project APE has remained largely undeveloped and in use for agriculture, with the exception of some structures in the central portion of the Project APE that were demolished or removed by the mid-1990s. The Project APE is currently vacant and undeveloped.

Native American Heritage Commission

A Sacred Lands File (SLF) search was requested from the NAHC on February 26, 2015. The SLF search results prepared by the NAHC indicated that Native American cultural resources are known to be located within the vicinity of the Project APE on the Valley Center 7.5-minute topographic quadrangle; however, no specific information regarding the types or exact locations or the resources was provided. Follow-up contact with Native American groups and/or individuals identified by the NAHC as having affiliation with the Project APE vicinity was conducted via certified mail on April 16, 2015 and via phone on April 23 and 27, 2015 (**Table 3**).

To date five responses have been received. In an email dated April 21, 2015, Chris Devers of the Pauma and Yuima Reservation Cultural Committee stated that he was unaware of any specific cultural resources within the vicinity of the Project APE, but requested that all Project-related ground disturbance be monitored by archaeological and Native American monitors. Mr. Devers also requested that he be kept informed on the progress of the Project. In a letter dated April 23, 2015, Shasta Gaughen, Tribal Historic Preservation Officer for the Pala Band of Mission Indians, stated that the Project is located outside of the Pala Band's Traditional Use Area (TUA), but requested that she be kept informed as to the progress of the Project. In addition, Ms. Gaughen asked that she be provided with Project updates, progress reports, and any documentation generated regarding previously reported or newly discovered sites. Ms. Gaughen also recommended that approved cultural monitors be on-site during all Project-related ground-disturbing activities. In an email dated April 30, 2015, Carmen Mojado of the San Luis Rey Band of Mission Indians Cultural Resources Department requested a copy of the cultural reports and results of the SLF search. In a letter response received on May 13, 1015 (dated April 2, 2015), Rose Duro, writing on behalf of the Rincon Band of Luiseño Indians, stated that the project is located within the Aboriginal Territory of the Luiseño people, and also within in the Rincon's historic boundaries and TUA. Ms. Duro indicated that the Rincon believe there is potential for cultural materials and requested that the Rincon Cultural Resources Department be afforded the opportunity to provide a Native American monitor for the Project. In a letter response dated May 28, 2015, Joseph Ontiveros, Cultural Resources Director for the Soboba Band of Luiseño Indians, stated that the Project APE is located within the Soboba TUA, and requested that a Native American monitor be present during Project-related ground disturbing activities including cultural

resources surveys and testing, as well as construction. Mr. Ontiveros requested that the City defer to groups in closer proximity to the Project APE for Native American monitoring, but stated that Soboba monitors are available if other monitors could not be obtained. All correspondence is attached as **Appendix C**.

The City also initiated Assembly Bill 52 (AB 52) consultation with the Native American groups who are traditionally and culturally affiliated with the geographic area of the proposed project, and who have requested such consultation in writing, including the San Luis Rey Band of Mission Indians, Rincon Band of Luiseño Indians and the Soboba Band of Luiseño Indians. The City mailed letters to the groups on August 26, 2015 inviting them to consult regarding potential impacts to tribal cultural resources. The Rincon Band of Luiseño Indians responded on October 6, 2015 requesting that "a Native American Monitor (preferably one that works for Rincon) will be present during all ground disturbing activities." The San Luis Rey Band of Mission Indians responded to the invitation and met with the City on August 28, 2015. The San Luis Rey Band stated that their representatives will provide the City with written information and mitigation measures regarding tribal cultural resources. On December 21, 2015, the San Luis Rey Band of Mission Indians submitted a request to the City requesting an extension on the comment period for the Draft MND, and requested continued consultation. The San Luis Rey Band of Mission Indians also provided Tribal Cultural Resource mitigation measures to be incorporated in the IS/MND. On February 8, 2016, the City and representatives from the San Luis Rey Band of Mission Indians met for a consultation meeting in which the City indicated it would be circulating the Draft IS/MND for public review again. The City also specified that the IS/MND would modify the mitigation measures for Tribal Cultural Resources to reflect the most current draft being discussed with the San Luis Rey Band of Mission Indians. On February 11, 2016, the City and the San Luis Rey Band of Mission Indians tribal representatives agreed on the final mitigation measures for Tribal Cultural Resources. Consequently, these mitigation measures would be incorporated into the MND and future projects as applicable. The recommendations presented at the end of this report incorporate these final mitigation measures developed with the San Luis Rey Band of Mission Indians.

TABLE 3
NATIVE AMERICAN OUTREACH

Contact	Tribe/Organization/	Date Letter Mailed	Date of Follow-up Phone Call	Response
Mark Macarro, Chairperson	Pechanga Band of Mission Indians	4/16/15	4/23/2015	SW with Kelsey Stricker, Director of the Pechanga Environmental Department and left a message. No response to date.
Chris Devers, Cultural Committee	Pauma and Yuima Rservation	4/16/15	4/27/2015	Mr. Devers requested monitoring of Project-related ground disturbance and Project updates.
Lavonne Peck, Chairwoman	La Jolla Band of Mission Indians	4/16/15	4/27/2015	SW with tribal administration and left message for Tom Rodriguez, the current tribal chairperson. No response to date.

Contact	Tribe/Organization/	Date Letter Mailed	Date of Follow-up Phone Call	Response
Frank Brown, Coordinator	Inter-Tribal Cultural Resource Protection Council	4/16/15	4/27/2015	Left VM. No response to date.
Clint Linton, Director of Cultural Resources	Iipay Nation of Santa Ysabel	4/16/15	4/27/2015	Left VM. No response to date.
Virgil Perez, Chairperson	Iipay Nation of Santa Ysabel	4/16/15	4/27/2015	Left VM. No response to date.
Rodney Kephart, Environmental Coordinator	Iipay Nation of Santa Ysabel	4/16/15	4/27/2015	Left VM. No response to date.
Robert H. Smith, Chairperson	Pala Band of Mission Indians	4/16/15	4/27/2015	SW Mr. Smith and directed to the Tribal Historic Preservation Officer, Shasta Gaughen.
Rebecca Osuna, Chairperson	Inaja Band of Mission Indians	4/16/15	4/27/2015	SW with tribal administration receptionist and left a message. No response to date.
Bo Mazzetti, Chairperson	Rincon Band of Mission Indians	4/16/15	4/27/2015	Left VM.
Bennae Calac	Pauma Valley Band of Luiseño Indians	4/16/15	4/27/2015	Left VM. No response to date.
Kristie Orosco, Environmental Coordinator	San Pasqual Band of Mission Indians	4/16/15	4/27/2015	SW John Flores, the current Environmental Coordinator. Mr. Flores requested the contact letter be re-sent to him.
EPA	Pauma and Yuima Reservation	4/16/15	4/27/2015	Unable to reach by phone. No response to date.
Tribal Council	San Luis Rey Band of Mission Indians	4/16/15	4/27/2015	SW Carmen Mojado, Cultural Resources Department. Ms. Mojado stated that she would respond to the contact letter and requested a copy of the records search results. In a subsequent email, Ms. Mojado requested cultural reports and SLF results.
Sheilla Alvarez	Barona Group of the Capitan Grande	4/16/15	4/27/2015	Left VM. No response to date.
Cultural Department	San Luis Rey Band of Mission Indians	4/16/15	4/27/2015	SW Carmen Mojado (see above).
Clifford LaChappa, Chairperson	Barona Group of the Capitan Grande	4/16/15	4/27/2015	Left VM with Sheila Alvarez. No response to date.
Randall Majel, Chairperson	Pauma and Yuima Reservation	4/16/15	4/27/2015	Unable to reach Mr. Majel via phone (not listed in the tribal office telephone directory). No response to date.
Allen E. Lawson, Chairperson	San Pasqual Band of Mission Indians	4/16/15	4/27/2015	Left VM. No response to date.
Paul Macarro, Cultural Resources Manager	Pechanga Band of Mission Indians	4/16/15	4/27/2015	SW Anna Hoover, Cultural Analyst, on 4/28/2015. Ms. Hoover requested Project location information and a copy of the records search results. Ms. Hoover stated that she would respond via letter.

Contact	Tribe/Organization/	Date Letter Mailed	Date of Follow-up Phone Call	Response
Mark Romero, Chairperson	Mesa Grande Band of Mission Indians	4/16/15	4/27/2015	Unable to reach Mr. Romero via phone (no answer). No response to date.
Vincent Whipple, Tribal Historic Preservation Officer	Rincon Band of Mission Indians	4/16/15	4/27/2015	SW Jim McPherson, Director of Cultural Resources. Mr. McPherson stated that he would respond via letter. In a subsequent letter response, Ms. Rose Duro, writing on behalf of the Rincon, requested tribal monitoring.
Shasta Gaughen, Tribal Historic Preservation Officer	Pala Band of Mission Indians	4/16/15	4/27/2015	SW Ms. Gaughen. She requested monitoring of Project-related ground disturbance and Project updates.
Rosmary Morillo, Chairperson; ATTN: Carrie Garcia	Soboba Band of Mission Indians	4/16/15	4/27/2015	Left VM. No response to date. Mr. Joseph Ontiveros, writing on behalf of the Soboba, requested tribal monitoring..

SW = spoke with

VM = voicemail

Geoarchaeological Review

Chris Lockwood, Ph.D., R.P.A., conducted a desktop geoarchaeological review of the Project APE and vicinity in order to evaluate the potential for buried archaeological resources within the Project APE. The following section presents the results of Dr. Lockwood's analysis.

Geology and Geomorphology

The Project APE is situated within the Escondido Valley on an alluvial fan below bedrock uplands. Local bedrock consists of Cretaceous-aged (145-66 million years ago) hornblend diorite (*Kdl*), and Jurassic- to Cretaceous- aged (201-66 million years ago) metavolcanic and metasedimentary (greenschist) rocks (*KJ*) (Kennedy, 1999). Weathering of bedrock and transport of unconsolidated grains by water and gravity has built an alluvial fan that slopes gently (approximately 3% or less) to the south in the direction of Escondido Creek. Surface deposits comprising the alluvial fan consist of old, well consolidated, poorly sorted permeable deposits capped by well-developed soils (*Qoa*); these deposits date to the middle and late Pleistocene and are younger than approximately 500,000 years old. It is likely that the alluvial fan also contains thin drapes of recent alluvium in places. However, the Project APE is topographically above the 500-year floodplain of Escondido Creek (DWR, 2004), and significant deposition dating within the last 12,000 years (*Qya*, late Pleistocene to Holocene) is restricted to the course of Escondido Creek, now channelized, approximately 700 feet to the south. Thus, the fan may have offered a relatively elevated and dry position above the floodplain, and may not have been subject to significant natural deposition within the timeframe of human occupation. Historically, the Project APE was used for agriculture for several decades. The 1948 and 1968 Valley Center 7.5-minute topographic maps indicate the property was used as orchard, probably citrus, into the mid-20th

century. After this time, the property appears to have been subject to plowing, as well as construction (and, later, demolition) of barns and outbuildings.

Soils

Soils within the Project APE consist of the Ramona sandy loam series soil (NRCS, 2015). These soils are consistent with natural soil development on an alluvial fan subject to agriculture. Ramona soils are found on alluvial terraces and fans at elevations of 250 to 3,500 feet. This soil consists of deep (>80 inches to restrictive feature), well-drained soils developed in alluvium derived mostly from granitic and related rock sources. Typically, Ramona soils have brown, slightly and medium acid, sandy loam and fine sandy loam A horizons; reddish brown and yellowish red, slightly acid, sandy clay loam B2t horizons; and strong brown, neutral, fine sandy loam C horizons. The A and B horizons have more than 15 percent combined coarse and very coarse sand and 5 to 35 percent fine rock fragments of 2 to 5 millimeter (mm) size. Rock fragments larger than 5mm are less than 5 percent. The C horizons are variable as to coarse sand, fine gravel, and rock fragments larger than 5mm but in general are coarser than the A and B horizons. These soils are typically used for production of grain, hay, pasture, irrigated citrus, olives, truck crops, and deciduous fruits.

Archaeological Potential

Several prehistoric archaeological sites, such as bedrock milling features with and without lithic debitage, have been recorded north of El Norte Parkway within 500 meters or less of the Project APE. These milling sites are found in areas with exposed bedrock outcrops, which were utilized as milling slicks. Where shovel probes have been attempted, they have terminated on weathered bedrock within 50 centimeters or less of ground surface. The environmental setting of the Project APE differs in the absence of bedrock outcrops and greater depths to restrictive layers (i.e., bedrock) and, therefore, would not have been a locus of milling activity. However, the Project APE may have offered tree nut or other resources, as well as a topographic position above Escondido Creek floodplain. While the Project APE might contain prehistoric archaeological resources, these are not likely to have become deeply buried through natural depositional processes. However, historic use of the Project APE for orchard and plow agriculture may have resulted in stratigraphic mixing, including horizontal and vertical movement of objects within the extent of agricultural disturbance. Furthermore, the Project APE may contain objects and features associated with historic agricultural use, including evidence of agricultural structures.

Cultural Resources Survey

Methods

A cultural resources survey of the Project APE was conducted on April 30, 2015 by Michael Vader to identify the presence of surface archaeological materials and historic-period built resources within the Project APE. All accessible portions of the Project APE with visible ground surface were surveyed in a systematic manner with transect intervals spaced no greater than 5 meters (approximately 16.5 feet) apart. No subsurface investigation was performed and no artifacts were collected during the pedestrian survey.

Sites were defined as consisting of one or more cultural features or three or more artifacts (45 years old or older) within an approximate 25-square-meter area. Fewer than three artifacts within 25-square-meter area were considered isolates. Newly recorded resources were assigned temporary numbers, photographed, and documented on California Department of Parks and Recreation (DPR) 523 forms.

Results

The Project APE consists of flat topography with vegetation that included recently mowed non-native grasses (**Figure 6**). Due to varying densities of the grasses, ground surface visibility varied throughout the Project APE: the east-central and southern portions of the Project APE had 10 to 15 percent visibility and the northern and west-central portions had 75 percent visibility (**Figure 7**). The northeastern boundary of the Project APE was paved with an approximate 3-foot wide strip of asphalt and had no visible ground surface.

As a result of the survey, one historic-period archaeological feature (MFRO-1) was documented. The feature consists of an approximate 2.5 foot square, fragmented concrete block inscribed with children's' names, ages, and handprints with a date in the center. The inscription read as follows (clockwise from north to south): "HELENE/ BR[?]NS / YRS. / (handprint) // ANTHONY / BOTHOF / [4] 1/2[YR]S / (handprint) // [RO]BERT / BOTHOF / 3YRS //196[7]". DPR 523 forms are attached as **Appendix D** *(Confidential, Bound Separately)*.

Overview of the northeastern portion of the APE (view to SW)

Overview of the southwest portion of the APE (view to NE)

SOURCE: ESA, 2015

Escondido MFRO for Agriculture Project D140480.00

Figure 6
Survey Conditions

SOURCE: ESRI

Escondido MFRO Facility Project . 140480.02

Figure 7

Survey Coverage Map

Resource Evaluation

As a result of this study, one historic-period archaeological feature, MFRO-1, was documented in the Project APE. Research on the names inscribed in the concrete block was conducted. Sources reviewed include the San Diego County Public Library and the Los Angeles Public Library databases, the City of Escondido Planning Department website, Ancestry.com database, and a general internet search.

Anthony and Robert Bothof were the sons of Anthony C. Bothof, Jr. (b. 1940, d. 2014) and Constance A. Prins (b. 1940). Anthony Jr. came to the United States in 1955. The Bothof Family, including Anthony Sr., his wife Alida, and eight children, left Holland in search of better wages and settled in Hollandale, Minnesota. Anthony Sr. was a baker by trade. Anthony Jr. (also known as Tonnni or Tony) expressed in a newspaper article that he would like to become a butcher (McCluskey, 1955). Anthony Jr. and Constance were married on March 24, 1961 in San Diego. Anthony was born on February 8, 1962 and Robert was born on March 8, 1963 (Ancestry.com, 2015).

The internet search revealed that Anthony C. Bothof, Jr. was president of Bothof's Butchering, which was incorporated on March 22, 1971 (corporatewiki.com, 2015). The address provided for Bothof's Butchering was 2512 East Washington Avenue, currently a single-family residence bounding the southeast portion of the Project APE (corporationwiki.com, 2015; City of Escondido Planning Department, 2015). No additional information could be obtained about his sons Anthony and Robert, and the identity of the third child, Helene, could not be established.

National Register/California Register

Criterion A/1: To be considered for listing under Criterion A/1, a resource must be associated with one or more events important in history. Criterion A/1 recognizes properties associated with single events, such as the founding of a town, or with a pattern of events, repeated activities, or historic trends. The events or trends, however, must clearly be important within the associated context. Moreover, the resource must have an important association with the event or historic trends – mere association with historic events or trends is not enough, in and of itself to qualify under Criterion A/1 (U.S. Department of the Interior, 2002). Research did not reveal that the Bothof Family is associated with events that have made a significant contribution to the broad patterns of our history and, therefore, MFRO-1 does not appear to be eligible for the National Register or California Register under Criterion A/1.

Criterion B/2: Criterion B/2 applies to properties associated with individuals whose specific contributions to history can be identified and documented. Persons "significant in our past" refers to individuals whose activities are demonstrably important within a local, state, or national historic context. The criterion is generally restricted to those properties that illustrate (rather than commemorate) a person's important achievements and productive life, and must be the resource that is most closely associated with that person. Each resource associated with an important individual should be compared to other associated properties to identify those that best represent the person's historic contributions (U.S. Department of the Interior, 2002). Research conducted

for MFRO-1 revealed that it is associated with the Bothof Family. Although the feature could be connected to a specific family, none of the individuals identified appear to have made significant contributions to our past and, therefore, MFRO-1 does not appear to be eligible for the National Register or California Register under Criterion B/2.

Criterion C/3: Criterion C/3 applies to properties significant for their physical design or construction, including such elements as architecture, landscape architecture, engineering, and artwork. To be eligible under Criterion C/3, a resource must meet at least one of the following requirements: embody distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic value; or represent a significant and distinguishable entity whose components may lack individual distinction. The first requirement, that properties "embody the distinctive characteristics of a type, period, or method of construction," refers to the way in which a resource was conceived, designed, or fabricated by a people or culture in past periods of history. "The work of a master" refers to the technical or aesthetic achievements of an architect or craftsman. "High artistic values" concerns the expression of aesthetic ideals or preferences and applies to aesthetic achievement. A structure is eligible as a specimen of its type or period of construction if it is an important example (within its context) of building practices of a particular time in history (U.S. Department of the Interior, 2002). Resource MFRO-1 consists of a 2.5-foot-square, fragmented concrete block inscribed with children's names, ages, handprints, and a date. As such, MFRO-1 does not possess distinctive architectural characteristics, features, or construction methods. Research conducted for MFRO-1 did not reveal the involvement of builders/designers that are considered master craftsmen. Therefore, MFRO-1 does not appear to be eligible for the National Register or California Register under Criterion C/3.

Criterion D/4: Criterion D/4 asks whether a resource has the potential to yield information important to prehistory or history. While resource MFRO-1 contained some information regarding the Bothof Family, the data potential was exhausted through its recordation and the information gleaned though the archival research does not appear to be significant information important to history. Therefore, MFRO-1 does not appear to be eligible for the National Register or California Register under Criterion D/4.

City of Escondido Local Register of Historic Resources

Similar to the criteria outlined above for the National Register and California Register, the City of Escondido Local Register of Historic Resources recognizes historic resources that meet one or more of 13 criteria that is applicable to the type of resource being evaluated. Of the 13 criteria listed, Criteria 1 and 11 are most applicable to the evaluation of MFRO-1. Criterion 1 states that a resource is eligible for listing if it is strongly identified with a person or persons who significantly contributed to the culture, history, prehistory, or development of the City of Escondido, region, state or nation. Criterion 11 states that Escondido landscape features that are associated with an event or person of historical significance to the community or warrants special recognition due to size, condition, uniqueness or aesthetic qualities may be eligible for listing. As described above, MFRO-1 is associated with the Bothof Family; however, research conducted for MFRO-1 indicates that the Bothofs do not appear to be persons who significantly contributed to the culture,

history, prehistory, or development of the City of Escondido. Nor does MFRO-1 appear to warrant special recognition due to size, condition, uniqueness or aesthetic. As such, MFRO-1 is recommended not eligible for listing in the City of Escondido Local Register of Historic Resources.

Conclusions and Recommendations

One historic-period archaeological feature, MFRO-1, was documented as a result of this study and is recommended not eligible for listing in the National Register, California Register, or City of Escondido Local Register of Historic Resources, nor does it appear to be of exceptional significance. Therefore, MFRO-1 does not qualify as a historic property under Section 106 of the NHPA or a historical or unique archaeological resource under CEQA, and no further work or mitigation is recommended for this resource.

No other archaeological resources were identified in the Project APE as a result of archival research or survey, and significant archeological resources are not anticipated to be located within the Project APE. Although the NAHC SLF search results indicate that Native American cultural resources are known to be present within the vicinity of the Project APE, Native American respondents have not indicated that there are any known resources within the Project APE. In addition, the geoarchaeological review indicates that, if present, archaeological resources would tend to be either on the surface, or shallowly buried and disturbed by past agricultural practices. Nevertheless, since the Project includes ground-disturbing activities, there remains a potential for discovery of subsurface archaeological deposits. The following measures, developed as a part of AB 52 consultation between the City and the San Luis Rey Band of Mission Indians, are recommended to ensure that the Project would result in **No Historic Properties Affected** under Section 106 of the NHPA and less than significant impacts to historical or unique archaeological resources under CEQA.

1. The City recommends the applicant enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe that is traditionally and culturally affiliated with the Project Location ("TCA Tribe") prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources, and (2) to formalize protocols and procedures between the Applicant/Owner and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains, funerary objects, cultural and religious landscapes, ceremonial items, traditional gathering areas and cultural items, located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.

2. Prior to issuance of a grading permit, the applicant shall provide written verification to the City that a qualified archaeologist and a Native American monitor associated with a TCA Tribe have been retained to implement the monitoring program. The

archaeologist shall be responsible for coordinating with the Native American monitor. This verification shall be presented to the City in a letter from the project archaeologist that confirms the selected Native American monitor is associated with a TCA Tribe. The City, prior to any pre-construction meeting, shall approve all persons involved in the monitoring program.

3. The qualified archaeologist and a Native American monitor shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.

4. During the initial grubbing, site grading, excavation or disturbance of the ground surface, the qualified archaeologist and the Native American monitor shall be on site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of tribal cultural resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.

5. In the event that previously unidentified tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.

6. If a potentially significant tribal cultural resource is discovered, the archaeologist shall notify the City of said discovery. The qualified archaeologist, in consultation with the City, the TCA Tribe and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the tribal cultural resource's treatment and disposition shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor and be submitted to the City for review and approval.

7. The avoidance and/or preservation of the significant tribal cultural resource and/or unique archaeological resource must first be considered and evaluated as required by CEQA. Where any significant tribal cultural resources and/or unique archaeological resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, then a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor, and shall be subject to approval by the City. The archaeological monitor, in consultation with the Native American monitor, shall determine the amount of material to be recovered for an adequate artifact sample for

analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.

8. As specified by California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted on-site and in situ where they were discovered by a forensic anthropologist, unless the forensic anthropologist and the Native American monitor agree to remove the remains to an off-site location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the NAHC, shall be contacted in order to determine proper treatment and disposition of the remains in accordance with California Public Resources Code section 5097.98. The Native American remains shall be kept in-situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur on-site in the presence of a Native American monitor.

9. If the qualified archaeologist elects to collect any tribal cultural resources, the Native American monitor must be present during any testing or cataloging of those resources. Moreover, if the qualified Archaeologist does not collect the cultural resources that are unearthed during the ground disturbing activities, the Native American monitor, may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions. Any tribal cultural resources collected by the qualified archaeologist shall be repatriated to the TCA Tribe. Should the TCA Tribe or other traditionally and culturally affiliated tribe decline the collection, the collection shall be curated at the San Diego Archaeological Center. All other resources determined by the qualified archaeologist, in consultation with the Native American monitor, to not be tribal cultural resources, shall be curated at the San Diego Archaeological Center.

10. Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner to be submitted with the report. The report will

include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.

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Appendix A
Personnel

MONICA STRAUSS, MA, RPA

Director, Southern California Cultural Resources Group

Monica has experience in cultural resources management and has directed numerous cultural resources compliance projects throughout Southern California and the Channel Islands. She directs prehistoric and historic archaeological and historic architectural projects for public agencies and private developers and is proficient in CEQA and Section 106 compliance. She manages a staff of cultural resources specialists who conduct various types of compliance work including phase I archaeological and historic architectural surveys, construction monitoring, Native American consultation, archaeological testing and treatment, historic resource significance evaluations, and large-scale data recovery programs. Monica has prepared technical documents meeting the requirements of federal, State, and local agencies in support of CEQA and Section 106 as well as cultural resources components for General and Specific Plans. She provides senior oversight and quality control of archaeological resources-focused documents for ESA staff throughout the State.

Education

M.A., Archaeology , California State University, Northridge

B.A., Anthropology, California State University, Northridge

AA, Humanities, Los Angeles Pierce College

17 Years of Experience

Professional Affiliations

Register of Professional Archaeologists (RPA), #12805

Society for California Archaeology (SCA)

Society for American Archaeology (SAA)

Specialized Experience

Treatment of Historic and Prehistoric Human Remains

Archaeological Monitoring

Complex Shell Midden Sites

Groundstone Analysis

Qualifications

Exceeds Secretary of Interior Standards

CA State BLM Permitted

Certified in CA BLM Protocol

Riverside County Certified

Relevant Experience

Topock Compressor Station Remediation CEQA Services. Mohave County, AZ and San Bernardino County, CA. ***Cultural Resources Project Director***. Monica is overseeing the preparation of cultural resources EIR sections and is providing project support to the California Department of Toxic Substances Control (DTSC), including facilitating Native American involvement. DTSC provides oversight of the site investigation and cleanup activities for the Pacific Gas and Electric Company (PG&E) Topock Gas Compressor Station, located in San Bernardino County, 15 miles southeast of Needles, California. Groundwater samples taken under and near the Station were found to be contaminated with hexavalent chromium and other chemicals as result of past disposal activities. Soils contamination is also present at the site, requiring investigation and cleanup. These activities are highly scrutinized by the regional Native American Tribes because the area has important cultural and religious significance. ESA is currently preparing an EIR for soil investigations and will be conducting CEQA evaluations that tier off of the Program EIR for the Groundwater Remedy. Additional project-specific EIRs may be required for the final remedy, which is currently undergoing engineering design. ESA will provide these services as well as lead the Native American and public participation efforts.

Los Angeles Department of Water and Power (LADWP) Foothill Trunk Line Project. City of Los Angeles, CA. ***Cultural Resources Senior Reviewer***. ESA archaeologists have prepared a Phase I cultural resources study and EIR cultural resources section for the Los Angeles Department of Water and Power (LADWP) Trunk Line Project, located in the City of Los Angeles, CA. The proposed project includes the replacement of 16,600 feet of existing 24-inch, 26-inch, and 36-inch diameter welded steel pipe and 30-inch diameter riveted steel pipe with a 54-inch diameter welded steel pipe along Foothill Boulevard within the districts of Pacoima and Sylmar. Monica served as the Senior Reviewer for

Relevant Experience (Continued)

the Phase I cultural resources study and EIR section.

Santa Clarita Valley Sanitation District, Facilities Plan Update EIR, Los Angeles County, CA. ***Cultural Resources Senior Reviewer.*** Monica is currently serving as senior reviewer for the Phase I cultural resources study for the project. The study identified 23 cultural resources within or adjacent to the project, including the historical San Fernando Road. The resources were documented and evaluated for their eligibility to the California Register in a technical report and the results incorporated in the EIR. The project includes installation of a approximate 35-mile recycled water pipeline from the Santa Clarita Valley to East Los Angeles.

Los Angeles Department of Water and Power, Scattergood Olympic Transmission Line Monitoring, Los Angeles County. ***Cultural Resources Principal Investigator.*** The Los Angeles Department of Water and Power (LADWP) is proposing to construct and operate approximately 11.4 miles of new 230 kilovolt (kv) underground transmission line that would connect the Scattergood Generation Station and Olympic Receiving Station. The project includes monitoring of potential vault location testing. Monica currently coordinates and provides daily oversight to archaeological, Native American, and paleontological monitors. An Archaeological Resources Monitoring Report and a Paleontological Resources Monitoring Report documenting the monitoring findings will be submitted, together with daily monitoring logs, at the close of the project.

Mission Creek Lagoon and Laguna Channel Restoration Project, Santa Barbara County, CA. ***Cultural Resources Project Director***. Monica provided senior oversight of the cultural resources study which identified several cultural resources that could pose a regulatory constraint on the project, including 18 historic built resources. The area was also identified as sensitive for archaeological resources. ESA is currently assisting the City of Santa Barbara identify a design alternative within the Project area that is economically feasible and meets the multiple objectives of flood control, water quality improvement, public safety and access, and habitat restoration.

Environmental Services for Jacqueline Cochran Regional Airport, Riverside County, CA. ***Cultural Resources Project Director.*** ESA Airports is teamed with C&S Companies to provide technical support and CEQA documentation for the proposed acquisition of land at Jacqueline Cochran Regional Airport in Riverside County, CA. In support of an EA prepared for Jacqueline Cochran Regional Airport, ESA Airports has provided supporting technical studies, as well as prepared an Initial Study/Negative Declaration pursuant to the requirements of CEQA. Monica directed a Phase I Cultural Resources Survey Report for the project. An Archaeological Resources Technical Report was prepared that evaluated the archaeological sites that had been identified as a result of the investigation. The results of the technical

Relevant Experience (Continued)

report were incorporated into the CEQA document, which included an impacts analysis and appropriate mitigation measures.

Los Angeles Unified School District (LAUSD) Florence Nightingale Middle School Historic Architectural Review, Los Angeles County, CA. ***Cultural Resources Project Director.*** Monica managed the historical analysis of the LAUSD Florence Nightingale Middle School. The analysis included a cultural resources survey that photo-documented buildings that would be affected by the project. The project includes HVAC replacement to a 1967 Classroom Buildings, kitchen upgrades within the 1937 Domestic Science/Cafeteria Building, and improvements to the 1965 chiller yard. Florence Nightingale Middle School was previously recommended eligible for listing in the California Register.

Los Angeles Department of Water and Power, Rose Valley Well V817 Project, Inyo County, CA. ***Cultural Resources Principal Investigator.*** ESA prepared an IS MND in connection with the installation of a new water pipeline between an existing water well and the Los Angeles Aqueduct 1. The project is located on lands owned by the LADWP in Rose Valley in southern Inyo County. Monica directed an Extended Phase I Archaeological Resources Investigation in order to determine the boundaries of a known prehistoric archaeological site and to assess its California Register eligibility. The methods of the investigation were presented in a Research Design prepared prior to the start of field work and the results were reported in an Extended Phase 1 Technical Report.

McCoy Solar Energy Project, Riverside County, CA. ***Cultural Resources Project Director***. ESA is preparing an Environmental Impact Statement and Environmental Impact Report under NEPA and CEQA for an up-to 750-megawatt (MW) photovoltaic (PV) solar power plant and related infrastructure within an approximately 7,700-acre right-of-way near the California-Arizona border. Monica managed the preparation of the cultural resources section of the document which addressed impacts and provided mitigation measures to reduce impacts to cultural resources.

City of Temecula, Bella Linda Residential Development EIR, Temecula, CA. ***Cultural Resources Principal Investigator.*** ESA is preparing an EIR for a residential development in the City of Temecula on a site that is adjacent to Pechanga Parkway and Loma Linda Road. The project includes 325 apartment units and 49 senior family units and would require General Plan and zoning amendments resulting in a change from the existing Professional Office designation to Medium Density Residential. The project would also feature a variety of amenities, including a meandering trail and the conversion of an existing concrete channel to a bio-swale. The most controversial project challenges are the considering cultural sensitivity of the site, including addressing concerns of the Pechanga Band of Luiseño Indians, and the addition of project traffic on roadways with limited capacity. ESA conducted a Phase I and Phase II Archaeological Resources Investigation, identifying resources that

Relevant Experience (Continued)

might be impacted by the project and determining their California Register and National Register eligibility. Monica served as principal investigator in the preparation of the Phase I Cultural Resources Report, Research Design and Phase II Testing Report and coordinated with the Pechanga on concerns related to the project.

Los Angeles County Waterworks District 40 (LACWWD40) Regional Recycled Water Project, Phase 2, Palmdale, CA. ***Cultural Resources Project Director***. ESA was retained by LACWWD40 in 2009 to prepare an Initial Study/Environmental Assessment and cultural resources technical study for Phase 2 of the Regional Recycled Water Project. In 2010 and 2011, Monica directed a team of ESA archaeologists who performed a pedestrian survey of the 5.25 linear mile project area and documented archaeological sites encountered. Nine cultural resources were documented during the survey; however, because the project APE was narrowed after the survey, only four are located within the current project area.

California Department of Water Resources (DWR), Warm Creek Project, San Bernardino County, CA. ***Cultural Resources Project Director***. Monica managed the preparation of a cultural resource assessment for the DWR Warm Creek Project which included repairs to the Santa Anna Pipeline. As part of the cultural resources assessment, archival research and a field survey were conducted. One potential historic resource, a linear alignment of granite boulders possibly related the 19th-century Coburn Swamp Ditch, was identified in the project area.

Western Hills Water District, West Hills Water Treatment Plant Project. San Benito County, CA. ***Cultural Resources Senior Reviewer***. ESA prepared a Phase I cultural resources survey report for the proposed West Hills Water Treatment Plant Project located just southwest of the City of Hollister in San Benito County, CA. The proposed project would improve drinking water quality, water supply reliability, and would serve to balance regional water resources in the Hollister Urban Area and includes the construction of the West Hills Water Treatment plant and associated facilities, a raw water pump station, a raw water pipeline, and a treated water pipeline. Monica served as the Senior Reviewer for the Phase I cultural resources survey report.

California Department of Water Resources (DWR), Perris Dam Remediation Program, Riverside County, CA. ***Cultural Resources Project Director***. Monica managed the preparation of a Historic Resource Evaluation Report for the DWR Perris Remediation Project. The Project would provide greater seismic stability for Perris Dam and its associated outlet works, as well as adding a new emergency outlet extension channel, thereby increasing public safety in the event of a high-magnitude earthquake. The project involved the U.S. Army Corps of Engineers, requiring compliance with Section 106 of the NHPA The study concluded that the dam is not individually eligible for the

Relevant Experience (Continued)

National Register or California Register, but is considered a contributing element of the California Aqueduct. The project would not affect the eligibility or integrity of the California Aqueduct and a finding of no adverse effect was recommended.

California Department of Water Resources, Perris Dam Mitigation Area, Riverside County, CA. ***Cultural Resources Senior Reviewer***. ESA prepared a Phase I cultural resources survey report for the project which includes a creation/restoration program within the Western Riverside County Regional Conservation Authority mitigation area with the purpose of creating/restoring riparian habitat that is biologically equivalent or superior to that which is being impacted as a result of the Perris Dam Remediation Program being carried out at Lake Perris. The study concluded that the area is sensitive for archaeological resources and additional work was recommended. Monica served as the Senior Reviewer for the Phase I cultural resources survey report.

California Department of Water Resources, Pearblossom Solar Project, Los Angeles County, CA. ***Cultural Resources Project Director***. ESA has prepared a MND for the installation of solar panels adjacent to the Pearblossom Pumping Plant in the Antelope Valley. ESA also conducted biological and cultural surveys of the proposed site, including preparation of a Phase I Cultural Resources Survey Report. Monica managed the cultural resource study including archaeological and historic architectural survey, background research, and the preparation of the survey report which identified the Pearblossom Pumping Plant as a contributor to the National Register-eligible California Aqueduct.

California Department of Water Resources (DWR), On-Call Environmental Planning Services. Serrano Beach Project, Los Angeles County, CA. ***Cultural Resources Principal Investigator.*** Monica provided senior oversight of the Phase I cultural resources study, including archival research, survey, and report. DWR proposes to repair culverts along the Serrano Beach access road near the Pyramid Lake Vista Del Lago Visitors Center, replacement of a fence surrounding an existing water tank, and installation of a new water pipeline near the Warne Powerplant. The project is located within the Angeles National Forest, requiring compliance with Section 106 of the National Historic Preservation Act (NHPA). The study concluded that the area is sensitive for archaeological resources and monitoring was recommended.

Rancho Malibu Cultural Resources Monitoring Project, Malibu, CA. ***Cultural Resources Project Director.*** Green Acres, LLC, is developing the Rancho Malibu Resort, a 28.7-acre property located in the City of Malibu, California. The Project includes the construction of 146 guestroom units, retail shops, a restaurant and lobby bar, sundries store, library, ballrooms, meeting rooms, fitness center and spa, swimming pools/spas, playground, pool cabanas and outdoor function lawns. As part of construction, drilling for percolation

Relevant Experience (Continued)

borings was carried out. Monica managed cultural resources monitoring of the drilling of 13 borings and conducted Native American coordination.

California Department of Water Resources, On-Call Environmental Planning Services. Cedar Springs Dam Projects. San Bernardino County, CA. *Cultural Resources Principal Investigator*. Monica provided senior oversight of the preparation of a Historic Resources Evaluation Report for Cedar Springs Dam located at Silverwood Lake on the East Branch of the California Aqueduct. The projects included dam face restoration, erosion repair, and installation of a seepage warning system. Two of the projects involved federal oversight by the Federal Energy Regulatory Commission, requiring compliance with Section 106 of the NHPA. The study concluded that while the dam appears eligible for the National Register and California Register, the projects would result in no adverse effects to the dam.

Bureau of Land Management, Native American Monitoring and Archaeological Support, Genesis Solar, Riverside County, CA. *Cultural Resources Project Manager*. The Genesis Solar project is a concentrated solar electric generating facility located in Riverside County. The project consisted of two independent solar electric generating facilities with a nominal net electrical output of 125 MW each, for a total net electrical output of 250 MW. The project site is located approximately 25 miles west of the City of Blythe on lands managed by the Bureau of Land Management (BLM). Monica provided senior oversight and third party review of cultural resources studies. She also directed third party review surveys and the preparation of a Supplemental Cultural Resources Survey Report on behalf of the BLM. The results of the survey were incorporated into a supplemental EA for proposed alterations to gen-tie line routes.

Bureau of Land Management (BLM), Blythe Mesa Solar Project, Riverside County, CA. *Cultural Resources Project Director*. ESA provided third-party review on behalf of the BLM California Desert District Office. Monica provided senior oversight to her staff who reviewed cultural resources documents and mitigation recommendations for technical adequacy and to ensure documents/recommendations met current standards and practices and complied with BLM 8100 series manual sections.

Bureau of Land Management, Ocotillo Wind Farm Express Project, Imperial County, CA. *Cultural Resources Project Director.* ESA was retained to serve as third-party reviewer to the Bureau of Land Management (BLM). Monica is specially trained in BLM protocols and procedures. She is currently assisting BLM (El Centro Field Office) staff with general oversight of the 15,000-acre cultural resources study being carried out for the Ocotillo Wind Farm Express project. Monica conducted peer-review of cultural resources documents to ensure technical accuracy and quality and conformance with BLM requirements, assisted with Native American and Section 106 coordination, and

Relevant Experience (Continued)

provided oversight to staff who are conducting compliance monitoring of the survey effort.

8minutenergy Renewables LLC, Calexico and Mount Signal Solar Farm EIR, Imperial County, CA. ***Cultural Resources Principal Investigator.*** Monica directed a staff who conducted an expedited cultural resources survey and prepared a Phase I Cultural Resources Study. The survey resulted in the identification of two historic-era archaeological resources and one built historic resource within the project area. The project included the construction of three solar facilities on approximately 4,200-acres of land and a 230-kilovolt (kV) transmission line that will connect the three facilities. The transmission line is located, in part, on lands under the jurisdiction of the Bureau of Land Management.

Los Angeles Department of Recreation and Parks, Sheldon Skate Plaza Project, Los Angeles, CA. ***Cultural Resources Project Director***. Monica directed a cultural resources constraints study for the Los Angeles Department of Recreation and Parks (LADRP) Sheldon Skate Plaza Project. The LADRP plans to develop a 2.2-acre skate plaza on vacant land. The facility would consist of 20,000 square feet of skateable area, with elements to include features such as hubbas, stairs and rails, ledges and curbs, pads, and tranny ramps. Additionally, a new parking lot, a pre-fabricated restroom building, landscaping and irrigation, drinking fountain, security lighting, and Americans with Disabilities (ADA) pathways will be included.

Sulphur Creek Mining District Clean-Up Project, Colusa County, CA. ***Cultural Resources Project Director.*** The U.S. Army Corps of Engineers is proposing to remediate the effects of abandoned mines on local water supplies with Colusa County. In support of the Sulphur Creek Mining District Clean-up Project Monica provided senior oversight to ESA cultural resources specialists who conducted a Phase I cultural resources investigation. The investigation included an archaeological survey in which a total of six cultural resources were recorded, including the ethnographic village site of Yawi , three historic-period mines, an early homestead, and a series of small earthen dams. The U.S. Army Corps of Engineers is proposing to remediate the effects of abandoned mines on local water supplies.

Patterson Fish Screen Project, Stanislaus County, CA. ***Cultural Resources Principal Investigator.*** ESA was retained by Montgomery, Watson Harza Americas to provide cultural resources services in connection with the installation of a fish screen in Patterson Irrigation District. During project construction ESA responded to a human remains discovery and facilitated coordination with the Most Likely Descendent, prepared a Treatment Plan and prepared a Section 106 compliant Phase I Assessment of several expanded project areas in response to a request from the Bureau of Reclamation.

CANDACE R. EHRINGER, MA, RPA

Senior Archaeologist

Candace is an archaeologist with experience in cultural resources management in California and is experienced in both California's desert and coastal environments. Her strengths include managing field surveys, archaeological monitoring, lab analysis, and coordination with Native American representatives. Candace authors and provides senior level review of documentation in support of CEQA, NEPA, and Section 106 compliance. In addition to her knowledge of prehistoric site contexts, Candace has extensive expertise with identification and classification of all types of historic materials.

Education

M.A., Anthropology, California State University, Northridge

B.A., Anthropology, East Carolina University

15 Years Experience

Professional Affiliations

Register of Professional Archaeologists

Society for California Archaeology

Society for Historical Archaeology

California Historical Society

Qualifications

Exceeds Secretary of the Interior's Standards

CA State BLM Permitted

Certified in CA and NV BLM Protocol

HAZWOPER Certified

Continuing Education

AEP Advanced CEQA Workshop, 2011

ACHP Section 106 Essentials training course, 2010

Riverside County certification course, 2009 and 2011

Relevant Experience

Joshua Basin Water District, Recharge Basin and Pipeline Project – Archaeological Testing, San Bernardino County, CA. *Project Manager.* Candace authored the testing plan and managed archaeological testing at multi-component site CA-SBR-13305/H. A subsurface component was not identified in the project's area of direct impact and this portion of the site was recommended not eligible for the National Register or California Register. The project includes the construction of an approximate 30-acre recharge basin facility and a 24,000 linear foot extension of the Morongo Basin Pipeline along public roadways to the new basin.

City of Temecula, Bella Linda Residential EIR – Archaeological Testing, Temecula, CA. *Field Director.* Candace authored the testing plan and served as field director for subsurface investigation of the approximate 22-acre project area. The investigation did not identify any subsurface deposits within the project area. The project includes development of a residential units consisting of 325 apartment units totaling 462,622 square feet and 49 senior single-family units.

California Department of Water Resources (DWR), California Aqueduct Bridges Seismic Retrofit, Kern and San Bernardino Counties, CA. *Project Manager.* Candace managed the completion of an Archaeological Survey Report, a Historical Resources Evaluation Report, a Historic Properties Survey Report, and Finding of Effect document in coordination with the California Department of Transportation (Caltrans) and DWR. DWR proposes to remedy structural seismic deficiencies for six existing bridges spanning the California Aqueduct. The California Aqueduct was determined eligible for listing in the National Register under Criteria A and C for its association with irrigation and agricultural development of California and water conveyance engineering and design. The six bridges are considered contributors to the aqueduct system.

California Department of Water Resources (DWR), Serrano Beach Project, Los Angeles County, CA. *Project Manager.* Candace managed a Phase I cultural resources study, including archival research, survey, and report. DWR proposes to repair culverts along the Serrano Beach access road near the Pyramid Lake Vista Del Lago Visitors Center, replacement of a fence

Relevant Experience (Continued)

surrounding an existing water tank, and installation of a new water pipeline near the Warne Power Plant. The project is located within the Angeles National Forest, requiring compliance with Section 106 of the National Historic Preservation Act (NHPA). The study concluded that the area is sensitive for archaeological resources and monitoring was recommended.

California Department of Water Resources, Cedar Springs Dam Projects, San Bernardino County, CA. ***Project Manager*****.** Candace managed the completion of a Historic Resource Evaluation Report for Cedar Springs Dam located at Silverwood Lake on the East Branch of the California Aqueduct. The projects included dam face restoration, erosion repair, and installation of a seepage warning system. Two of the projects involved federal oversight by the Federal Energy Regulatory Commission (FERC), requiring compliance with Section 106 of the NHPA. The study concluded that while the dam appears eligible for the National Register and California Register, the projects would result in no adverse effects to the dam.

California Department of Water Resources, Warm Creek Project, San Bernardino County, CA. ***Project Manager*****.** Candace conducted archival research and managed the field survey. The project included repairs to the Santa Ana pipeline located under Warm Creek. One potential historic resource, a linear alignment of granite boulders possibly related the 19th-century Coburn Swamp Ditch, was identified in the project area.

California Department of Water Resources, Perris Dam Remediation Program, Riverside County, CA. ***Cultural Resources Project Manager*****.** Candace managed the preparation of a Historic Resource Evaluation Report for Lake Perris Dam. The Project would provide greater seismic stability for Perris Dam and its associated outlet works, as well as adding a new emergency outlet extension channel, thereby increasing public safety in the event of a high-magnitude earthquake. The project involved the U.S. Army Corps of Engineers (USACE), requiring compliance with Section 106 of the NHPA The study concluded that the dam is not individually eligible for the National Register or California Register, but is considered a contributing element of the California Aqueduct. The project would not affect the eligibility or integrity of the California Aqueduct and a finding of no adverse effect was recommended.

California Department of Water Resources, Perris Dam Mitigation Area, Riverside County, CA. ***Cultural Resources Project Manager*****.** Candace managed a Phase I cultural resources study for a proposed biological mitigation area. The project includes a creation/restoration program within the Western Riverside County Regional Conservation Authority mitigation area with the purpose of creating/restoring riparian habitat that is biologically equivalent or superior to that which is being impacted as a result of the Perris Dam Remediation Program being carried out at Lake Perris. The study concluded that the area is sensitive for archaeological resources and additional work was recommended.

Relevant Experience (Continued)

California Department of Water Resources, Pearblossom MND, Los Angeles County, CA. *Cultural Resources Project Manager.* Candace managed the preparation of a Phase I cultural resources study for the project. The project includes installation of approximate 70-acres of photovoltaic solar panels. The study resulted in the identification of three historic-period archaeological sites and one historic built resource (Pearblossom Pumping Plant complex). The archaeological resources were recommended not eligible for the National Register or California Register. The plant complex is considered a contributing element of the California Aqueduct, a National Register-eligible resource. The study concluded that the project would not cause a substantial adverse change in the significance of the California Aqueduct and no further work was recommended. The results of the study were incorporated into an MND for the project.

California Department of Water Resources, AVEK Turnout Project, Los Angeles County, CA. *Project Manager*. Candace managed the preparation of and co-authored a technical memorandum documenting a historic resource impact assessment for the West Branch of the California Aqueduct in compliance with Public Resources Code (PRC) Section 5024(f). The project includes construction of a new turnout facility on the West Branch of Pool 42. The West Branch is a potential contributing element of the California Aqueduct, a National Register-eligible resource. The assessment concluded that the project not result in a substantial adverse change to the significance of a historical resource. The results of the study were incorporated into an MND for the project.

California Department of Water Resources, Canal Repairs Project, Los Angeles County, CA. *Project Manager*. Candace managed the preparation of and co-authored a technical memorandum documenting a historic resource impact assessment for the California Aqueduct in compliance with PRC Sections 5024 and 5024.5. The project includes the removal and replacement of damaged concrete panels in the canal. The assessment concluded that the project not result in a substantial adverse change to the significance of a historical resource.

Irwin Ranch Water District (IRWD) Stockdale West Joint Banking Project, Kern County, CA. *Cultural Resources Project Manager*. Candace managed the preparation of a Phase I cultural resources study. The project includes construction and operation of groundwater recharge and recovery facilities on approximate 533-acres in western Kern County. The study identified two resources, including segments of the Pioneer Canal and a complex of oil-related features associated with the Northwest Area of the Strand Oil Field. Neither resource was recommended eligible for the California Register and no further work was recommended.

Relevant Experience (Continued)

Los Angeles Department of Water and Power (LADWP) Emergency Repairs to Victorville-Century Transmission Line #2 Tower 211.1 and Access Road, San Bernardino County, CA. ***Lead Cultural Resources Monitor.*** Candace served as the lead cultural resource monitor during emergency repairs and grading of an access road in the San Bernardino National Forest. She documented three historic resources, including one previously recorded resource, the transmission line, and two newly recorded resources, a communications shack and the transmission line access road with related drainage features.

Western Hills Water District, West Hills Water Treatment Plant Project, San Benito County, CA. ***Cultural Resources Project Manager.*** Candace managed the preparation of a Phase I cultural resources study and led the field survey. The proposed project would improve drinking water quality and water supply reliability, and would serve to balance regional water resources in the Hollister Urban Area. No cultural resources were identified as a result of the study.

Bureau of Land Management (BLM), Native American Monitoring and Archaeological Support, Genesis Solar, Riverside County, CA. ***Project Archaeologist.*** Candace managed the Class III field survey for the approximate 87-acre project area. The survey resulted in the identification of 10 previously recorded archaeological sites and nine new archaeological sites. The Genesis Solar project is a concentrated solar electric generating facility located in Riverside County. The project consisted of two independent solar electric generating facilities with a nominal net electrical output of 125 MW each, for a total net electrical output of 250 MW. The project site is located approximately 25 miles west of the City of Blythe on lands managed by the BLM.

Bureau of Land Management (BLM), Blythe Mesa Solar Project, Riverside County, CA. ***Third-Party Reviewer.*** Candace provided third-party review on behalf of the BLM California Desert District Office. She reviewed cultural resources documents and mitigation recommendations for technical adequacy and to ensure documents/recommendations met current standards and practices and complied with BLM 8100 series manual sections.

Kingbird Solar Project, Kern County, CA. ***Third-Party Reviewer.*** Candace provided third-party review of the cultural resources technical report to ensure technical adequacy for use as supporting documentation in preparation of a project EIR.

City of Santa Barbara, Mission Creek Lagoon and Laguna Channel Restoration Project, Santa Barbara County, CA. ***Cultural Resources Project Manager.*** Candace managed the preparation of a technical memorandum documenting a preliminary cultural resource study and conducted the field survey. The study identified several cultural resources that could pose a regulatory constraint on the project, including 18 historic built resources. The area was also identified as sensitive for archaeological resources. ESA is

Relevant Experience (Continued)

currently assisting the City of Santa Barbara identify a design alternative within the Project area that is economically feasible and meets the multiple objectives of flood control, water quality improvement, public safety and access, and habitat restoration.

Pacific Gas & Electric and California Department of Toxic Substance Control, Topock Compressor Station, CEQA Consultant, Topock, AZ/Needles, CA. ***Cultural Resources Project Manager.*** Candace is managing the preparation of cultural resources EIR sections and is providing project support to the California Department of Toxic Substances Control (DTSC), including facilitating Native American involvement. DTSC provides oversight of the site investigation and cleanup activities for the Pacific Gas and Electric Company (PG&E) Topock Gas Compressor Station, located in San Bernardino County, 15 miles southeast of Needles, California. Groundwater samples taken under and near the Station were found to be contaminated with hexavalent chromium and other chemicals as result of past disposal activities. Soils contamination is also present at the site, requiring investigation and cleanup. These activities are highly scrutinized by the regional Native American Tribes because the area has important cultural and religious significance. ESA is currently preparing an EIR for soil investigations and will be conducting CEQA evaluations that tier off of the Program EIR for the Groundwater Remedy. Additional project-specific EIRs may be required for the final remedy, which is currently undergoing engineering design. ESA will provide these services as well as lead the Native American and public participation efforts.

Environmental Services for Jacqueline Cochran Regional Airport, Riverside County, CA. ***Author.*** Candace co-authored the Phase 1 cultural resources technical report. ESA Airports is teamed with C&S Companies to provide technical support and CEQA documentation for the proposed acquisition of land at Jacqueline Cochran Regional Airport in Riverside County, CA. In support of an EA prepared for Jacqueline Cochran Regional Airport, ESA Airports has provided supporting technical studies, as well as prepared an IS/ND pursuant to the requirements of CEQA. The results of the technical report were incorporated into the CEQA document, which included an impacts analysis and appropriate mitigation measures.

Green Valley Road Bridge Replacement Project, Santa Cruz County, CA. ***Surveyor.*** Candace conducted the field survey for the project. The project proposes to replace the existing bridge with a new structure. The Green Valley Road Bridge spans Casserly Creek Tributary No. 1 and is approximately 5 miles north of the town of Freedom in Santa Cruz County. The project will be completed with funds from the FHWA, requiring compliance with Section 106. No archaeological resources were identified during the survey.

Los Angeles Unified School District, Florence Nightingale Middle School Historic Architectural Review, Los Angeles County, CA. ***Surveyor.*** Candace conducted the cultural resources survey and photo-documented buildings that would be affected by the project. The project includes HVAC replacement to a

Relevant Experience (Continued)

1967 Classroom Buildings, kitchen upgrades within the 1937 Domestic Science/Cafeteria Building, and improvements to the 1965 chiller yard. Florence Nightingale Middle School was previously recommended eligible for listing in the California Register.

Elkhorn Slough Foundation, Tidal Marsh Restoration Project, Monterey County, CA. ***Surveyor*****.** Candace participated in the cultural resources survey of the approximate 25-acre soils staging area. One prehistoric archaeological site was relocated and updated during the survey. In support of the Elkhorn Slough Foundation, ESA PWA is conducting planning, design and regulatory compliance tasks to restore tidal marsh in Elkhorn Slough. The primary approach will be through the addition of sediment to subsided areas, which will be staged on-site prior to placement.

Santa Clarita Valley Sanitation District, Facilities Plan Update EIR, Los Angeles County, CA. ***Cultural Resources Project Manager.*** Candace managed the Phase I cultural resources study for the project. The study identified 26 cultural resources within or adjacent to the project, including the historical San Fernando Road. Candace authored a historical context and evaluated the road for its eligibility to the National Register and California Register. The results of the study were incorporated in the EIR. The project includes installation of a approximate 35-mile recycled water pipeline from the Santa Clarita Valley to East Los Angeles.

Orange County Sanitation District, J-112 Outfall Land Section and OOBS Piping Rehabilitation EIR, Huntington Beach, CA. ***Cultural Resources Project Manager*****.** Candace completed a Phase I study, including records search, Native American contact program, and field survey. She authored the technical report, addressing Native American concerns regarding buried archaeological deposits and providing measures designed to reduce impacts to cultural resources. The Orange County Sanitation District is proposing to make repairs and upgrades to its outfall systems, including refurbishment of the 120-inch ocean outfall and use of the old 78-inch pipeline during the maintenance period.

8minutenergy Renewables LLC, Cluster I Solar Farm EIR, Imperial County, CA. ***Cultural Resources Project Manager.*** Candace led a field survey of the 1,731-acre project area and authored the technical document and EIR section, providing recommendations for the treatment of identified cultural resources. The project would develop a 255-megawatt solar photovoltaic power generating facility on agricultural land near the City of Calipatria. The Imperial County Planning and Development Services Department is the lead agency for this Project.

8minutenergy Renewables LLC, Calexico and Mount Signal Solar Farm EIR, Imperial County, CA. ***Archaeologist.*** Candace served as crew chief during the field survey and contributed to the report. The Phase I cultural resources study resulted in the identification of two historic-era archaeological resources and one built historic resource within the project area. The project

Relevant Experience (Continued)

includes the construction of three solar facilities on approximately 4,200-acres of land and a 230-kilovolt (kV) transmission line that will connect the three facilities. The transmission line is located, in part, on lands under the jurisdiction of the Bureau of Land Management.

Carmel River Lagoon Water Augmentation Permitting Support and MND, Monterey County, CA. ***Archaeologist.*** As part of the feasibility study data collection activities, three percolation testing units were proposed by California State University, Monterey Bay and University of California, Santa Cruz within the California Department of State Parks Carmel Lagoon Restoration Area. The units required excavation of up to 81 cubic feet of soil in a culturally sensitive area. Candace provided archaeological monitoring during installation of the percolation testing units and authored a technical memo documenting the results of the monitoring.

California Department of Water Resources, South Bay Aqueduct Maintenance and Rehabilitation Project, Alameda County, CA. ***Cultural Resources Senior Oversight.*** California Department of Water Resources is implementing improvements to and expansion of existing South Bay Aqueduct facilities. Part of the improvements include a temporary bypass for Mine's Road in Livermore, California. During trenching related to the bypass road, a historic-era trash deposit was uncovered. Candace inspected the discovery and developed a plan of action in line with EIR mitigation measures. She directed the recovery and documentation of the resource, and provided senior level review for the report.

City of Larkspur Public Works Corporation Yard, Initial Study, Marin County, CA. ***Cultural Resources Senior Reviewer.*** The City of Larkspur proposes to construct new permanent Public Works Corporation Yard and Engineering Department buildings. In support of the Initial Study, the cultural resources group prepared an Archaeological Survey Report, which indicated a high potential for buried resources and recommended a subsurface testing program be conducted. Candace provided senior level review for the report.

C&S Companies, Hollister Municipal Airport Master Drainage Plan IS/MND, San Benito County, CA. ***Archaeologist.*** Candace conducted a field survey of approximately 30-acres of airport property. No cultural resources were identified as a result of the study. The project would upgrade the existing airport drainage system to comply with Federal Aviation Administration design standards.

Monterey Regional Desalinization Project, Monterey County, CA. ***Archaeologist.*** In support of the NEPA phase of this project, Candace compiled information on cultural resources located along the proposed alternative routes and authored a technical memo providing recommendations for the route that would pose the least impact to known resources. The Bureau of Reclamation is the lead federal agency for the project.

MICHAEL VADER

Associate Archaeologist

Michael is an archaeologist and environmental compliance monitor with experience working on survey, data recovery, and monitoring projects. Michael has experience with project management, has led crews on multiple surveys, and is familiar with environmental compliance documents. He has worked on a variety of energy and water infrastructure projects throughout southern California, including projects in Riverside, San Diego, Imperial, San Bernardino, Los Angeles, Orange, Santa Barbara, and San Luis Obispo counties. Michael regularly works as part of a team, coordinating with construction personnel and Native American representatives.

Education

B.A., Physical Anthropology, University of California, Santa Barbara

9 Years Experience

Relevant Experience

Pacific Gas & Electric and California Department of Toxic Substance Control, Topock Compressor Station, CEQA Consultant, Topock, AZ/Needles, CA. ***Archaeologist.*** ESA is preparing an EIR for the proposed Topock Soils Investigation project, located in San Bernardino County, CA. The project includes soil investigation activities at the Pacific Gas and Electric Company Topock Gas Compressor Station and within adjacent lands. The purpose of the project is to characterize the nature and extent of chemicals of potential concern in the soils and sediments within the Station, along the perimeter area outside of the Station, as well as in the surrounding area. Michael has assisted in the Native American contact as part of the Cultural Resources Section of the EIR.

City of Los Angeles Department of Water and Power, Foothill Trunk Line Project, Los Angeles, CA. ***Archaeologist.*** ESA archaeologists have prepared a Phase I cultural resources study and EIR cultural resources section for the Los Angeles Department of Water and Power Trunk Line Project, located in the City of Los Angeles, CA. The proposed project includes the replacement of 16,600 feet of existing 24-inch, 26-inch, and 36-inch diameter welded steel pipe and 30-inch diameter riveted steel pipe with a 54-inch diameter welded steel pipe along Foothill Boulevard within the districts of Pacoima and Sylmar. Michael conducted archival research and contributed to the technical report and EIR cultural resources section.

Santa Clarita Valley Sanitation District, Chloride TMDL Facilities Plan Project. ***Archaeologist.*** ESA archaeologists have prepared a Phase I cultural resources assessment and EIR cultural resources section for the Santa Clarita Valley Sanitation District Chloride TMDL Facilities Plan Project. The proposed project includes the construction of wastewater facilities, as well as pipeline expansions and upgrades within Los Angeles and Ventura Counties. Michael conducted archival research, facilitated Native American outreach, performed an archaeological survey of the project site, and contributed to the technical report and EIR cultural resources section.

Relevant Experience (Continued)

Joshua Basin Water District Water Basin and Pipeline Project. San Bernardino County, CA. ***Archaeologist.*** ESA archaeologists have conducted testing at site CA-SBR-13305/H and surveyed an alternate pipeline route for the Joshua Basin Water District Water Basin and Pipeline project. The project includes the construction of an approximately 30-acre recharge basin facility and a 24,000 linear foot extension of the Morongo Basin Pipeline along public roadways. Michael assisted in the site testing and conducted the survey of the alternate pipeline through the City of Joshua Tree.

City of Los Angeles Department of Water and Power, Well V817 Rose Valley Pipeline Installation Project, Inyo County, CA. ***Archaeologist.*** ESA archaeologists have conducted an Extended Phase I investigation of site CA-INY-6980/H, and prepared an Extended Phase I testing report, as well as a MND for the Los Angeles Department of Water and Power Well V817 Rose Valley Pipeline Installation Project, located in Inyo County. The project involves the installation of an 8-inch diameter water pipeline with a length of 1,542 feet that would transport pumped water from Well V817 southwest to a staging area near the First Los Angeles Aqueduct. Michael assisted with testing of site CA-INY-6980/H, which consisted of a high-density scatter of prehistoric artifacts, and contributed to the Extended Phase I testing report.

West Hills Water Treatment Plant Project. San Benito County, CA. ***Archaeologist.*** ESA archaeologists have prepared a Phase I cultural resources survey report for the proposed West Hills Water Treatment Plant Project located just southwest of the City of Hollister in San Benito County, CA. The proposed project would improve drinking water quality, water supply reliability, and would serve to balance regional water resources in the Hollister Urban Area and includes the construction of the West Hills Water Treatment plant and associated facilities, a raw water pump station, a raw water pipeline, and a treated water pipeline. Michael contributed to the Phase I cultural resources survey report.

California Department of Water Resources, Perris Dam Project-Regional Conservation Authority Mitigation Area, Riverside County, CA. ***Archaeologist.*** ESA archaeologists have prepared a Phase I cultural resources survey report and for the California Department of Water Resources (DWR) for a habitat restoration program within Riverside County. DWR plans to implement a restoration program within the Regional Conservation Authority mitigation area with the purpose to create/restore riparian habitat that is biologically equivalent or superior to that which is being impacted as a result of the Perris Dam Remediation Program being carried out at Lake Perris. Michael led the archaeological survey of the project site, and contributed to the survey report.

Cadiz Valley Water Conservation, Recovery, and Storage Project. San Bernardino County, CA. ***Archaeologist.*** ESA archaeologists conducted a

Relevant Experience (Continued)

Phase I cultural resource assessment and prepared a cultural resource technical report and an EIR section in support of the Cadiz Valley Water Conservation, Recovery, and Storage Project located in San Bernardino County, CA. The project includes the construction of facilities including a wellfield and manifold system, water conveyance facilities, a tie-in to the Colorado River Aqueduct, access roads, staging areas, and power supply and distribution facilities, in order to conserve and recover native groundwater that is now lost due to evaporation. Michael assisted in the Phase I cultural resources assessment and contributed to the technical report.

California Department of Water Resources, Pearblossom Solar Project, Los Angeles County, CA. ***Archaeologist.*** ESA archaeologists have prepared a Phase I cultural resource study and an ISMND in support of the California Department of Water Resources' Pearblossom Solar Project located in Antelope Valley, Los Angeles County, CA. The project includes the installation of photovoltaic solar panels on approximately 70-acres of land within the Pearblossom Pumping Plant. The solar panels would generate approximately 10 megawatts (MW) of energy which would be transmitted to Southern California Edison via a nearby 230 kilovolt (kV) radial distribution line. Michael led the Phase I cultural resources survey and contributed to the technical report and ISMND.

Genesis Solar Energy Project Gen Tie Right-of-Way Modifications, Riverside County, CA. ***Archaeologist.*** ESA archaeologists have prepared a Class III cultural resources survey report for the Genesis Solar Energy Project located in eastern Riverside County. The project includes the construction of a 250-megawatt solar thermal power generating facility located between the community of Desert Center and the City of Blythe. Michael accompanied engineers and archaeologists from AECOM and the BLM in a site visit to assist in the determination a route for a project related pipeline that would have the least impact on nearby cultural resources.

California Department of Water Resources, Serrano Beach Access Road Culvert Repair Project, Los Angeles County, CA. ***Archaeologist.*** ESA archaeologists have prepared a Phase I cultural resources study for the California Department of Water Resources' Serrano Beach Access Road Culvert Repair project located adjacent to Pyramid Lake in the Angeles National Forest. The project involves the installation of a two-mile long water pipeline, upgrades to an existing water tank and fence line, and repairs to existing culverts along the Serrano Beach access road within the Pyramid Lake recreation area. Michael contributed to the Phase I cultural resources study technical report.

Patterson Irrigation District, Fish Screen Project Cultural Resources Recovery Efforts, Stanislaus County, CA. ***Archaeological Technician.*** ESA conducted cultural resource recovery efforts implemented in connection with the Cultural Resources Recovery and Treatment Plan prepared for the Patterson Irrigation District Fish Screen Project by ESA in March 2011. The project

Relevant Experience (Continued)

included the construction of a fish screen along the western edge of the San Joaquin River near the City of Patterson, within Stanislaus County, in order to allow migrating Chinook salmon, steelhead, and other native fish species to pass by PID's intake diversion without the risk of entrainment; and to protect PID's water rights so that diversions may continue even if the fish species are present in the vicinity of the diversion. Michael assisted in hand and mechanical screening of spoil dirt generated by project construction in order to identify and recover cultural resource.

Burns & McDonnell, Sunrise Powerlink Transmission Archaeological and Biological Monitoring, Imperial and San Diego counties, CA. E*nvironmental 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 performed as an archaeological technician assisting in the survey.

California Department of Water Resources, Pearblossom Solar Project Phase I Cultural Resource Assessment, Los Angeles County, CA. *Cultural Monitor.* In support of an IS/MND, ESA cultural resources staff conducted a records search and a Phase I cultural resources assessment of the approximately 70-acre Pearblossom Pumping Plant for the California Department of Water Resources. As a result of the Phase I cultural resources assessment, three newly archaeological resources and one historic built environment resource were recorded. ESA prepared a Phase I cultural resources assessment technical report, the results of which were incorporated into the IS/MND, which included an impacts analysis and appropriate mitigation measures. Michael performed as crew chief for the fieldwork portion of the project.

Sweetwater Authority, Sweetwater Reservoir Water Main Replacement, San Diego, CA. *Archaeological Technician.* ESA was retained by Sweetwater

Relevant Experience (Continued)

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.

Independent Field Technician, RECON Environmental, San Diego, CA.

- Assisted in site testing, archaeological monitoring, and site survey throughout San Diego and Imperial Counties, CA.

Independent Field Technician, ESA Associates, Los Angeles, CA.

- Participated in pedestrian survey and site recording, in addition to archaeological monitoring throughout Los Angeles, San Diego, Riverside, and Ventura Counties, CA.

Independent Field Technician, PCR Services Corp., Irvine, CA.

- Conducted archaeological monitoring throughout Orange and Riverside Counties.
- Assisted in pedestrian survey and site recording throughout Riverside County.

Associate Archaeologist PCR Services Corp., Irvine, CA .

- Successfully managed multiple projects.
- Led pedestrian surveys in Riverside and San Diego Counties, CA.
- Wrote and contributed to technical reports.
- Conducted archaeological and paleontological monitoring throughout Central and Southern California.
- Participated in pedestrian surveys throughout Southern California and the Tucson Basin, AZ.

Field Technician for Brian F. Smith and Associates, Poway, CA.

- Assisted in site testing and data recovery in San Diego County, CA.
- Monitored construction sites involving both historic and prehistoric contexts, in addition to Paleontological monitoring.

Lab Technician for Channel Island National Park Service.

- Collections processing of coastal midden from Santa Rosa Island.
- Conducted bulk sorting, in addition to lithic and faunal analysis, as well as categorizing shell by taxonomy.

CHRISTOPHER LOCKWOOD, PH. D, RPA

Principal Investigator & Geoarchaeologist

Chris specializes in geoarchaeology which involves evaluating the potential for buried cultural resources by reviewing geological information. Chris has conducted historic and prehistoric archaeological investigations within diverse ecological settings, including extensive work in riverine environments. Chris has served in a supervisory and management capacity for more than 30 cultural resource investigations.

Chris has over 17 years of experience in archaeology. He has overseen cultural resources investigations in a wide range of settings. Trained in fluvial geomorphology, Chris has conducted geoarchaeological investigations in floodplain and fluvial settings. He has led cultural resource management and academic research in Washington, Oregon, Hawaii, Texas, Illinois, and Missouri, as well as internationally.

Chris has 17 years of experience in archaeology and cultural resources in a broad range of environments including coastal, fluvial, lacustrine, volcanic, montaine, subarctic, arid, and urban settings. Chris manages cultural resources projects ranging in scope from reconnaissance surveys to data recovery to construction monitoring, designs fieldwork methodologies, and formulates Unanticipated Discovery Plans (UDP) and Archaeological Resources Monitoring and Treatment Plans (ARMTPs), and assists clients with cultural resources avoidance and mitigation. As a geoarchaeologist, Chris uses dual training in earth sciences and anthropology to assess project risks for cultural resources and to evaluate project alternatives. Chris surpasses the Secretary of the Interior's Standards for Professional Archaeologist and is a Registered Professional Archaeologist.

Education

Ph.D., Anthropology (Archaeology focus), University of Washington

M.A., Anthropology (Archaeology focus), University of Washington

Postgraduate work, Anthropology, Texas A&M University

B.A., History, Washington University in St. Louis

15 Years Experience

Professional Affiliations

Register Professional Archaeologists

HAZWOPER

Relevant Experience

Bella Linda Development, Temecula, CA. ***Geoarchaeologist.*** Chris reviewed geotechnical documents, historic maps and aerials, soil reports, and cultural resoruces documents to evaluate the potential for prehistoric cultural materials, including Native American burials, within the project area.

Oak Harbor Wastewater, Oak Harbor, WA. ***Geoarchaeologist.*** Chris is cultural resources lead for this project to evaluate alternatives for siting a wastewater treatment facility. He has prepared information relative to two preliminary alternatives analysis phases; additional phases are expected as project plans are more developed.

Waste-to-Energy Project, West Point Sewage Treatment Plant, Seattle, WA. ***Geoarchaeologist.*** Chris conducted archaeological training for construction crews working at a wastewater treatment plant on landscape containing a 4200 year-old archaeological site. He worked with Wastewater, Tribal and construction personnel to design protocol and equipment to enhance monitoring efficiency during continuous installation of micropiles. Chris then monitored and supervised monitoring during construction.

Satsop River Bridge Cultural Resources Assessment, Grays Harbor County,

Relevant Experience (Continued)

WA. *Geoarchaeologist.* Chris reviewed historic maps and aerial photographs in concert with geological data to evaluate the likelihood of development of cultural deposits in a project area proposed for bridge footing repair.

Fairview Water System Improvements Cultural Resources Assessment, Port Angeles, WA. *Geoarchaeologist.* Chris reviewed geotechnical and geological maps in concert with field shovel probe logs to assess the likelihood of cultural resources along a water conveyance alignment. He developed maps identifying portions of the alignment that would require additional cultural resources investigations.

A Street Levee Improvements, Auburn, WA. *Geoarchaeologist.*Chris oversaw completion of a cultural resources assessment of a flood improvement project that included removal of portions of a historic levee, development of a biorevetment, and wetland improvements.

King Street Station Rehabilitation, Seattle, WA. *Geoarchaeologist*
Chris has reviewed geotechnical logs, conducted crew trainings, and monitored construction during rehabilitation of King Street Station, Seattle's historic train station. After discovering remains of granite footings from a long-demolished building, Chris assisted SDOT and DAHP in implementing a creative mitigation solution to incorporate the stones into the rehabilitation of the station.

West Point Influent Screenings Geotechnical Monitoring, Seattle, WA. *Geoarchaeologist*. Chris monitored geotechnical test boring for a foundation for a new wastewater influent screenings building and authored a summary report of results.

Auburn Environmental Park, Auburn, WA. ***Geoarchaeologist.*** Chris worked to ensure compliance with Executive Order 05-05 for the City of Auburn's Environmental Park Boardwalk project. Chris synthesized geological and cultural survey records to illustrate that the landform had a very low probability for cultural resources. Chris then analyzed the specific construction technology and equipment to demonstrate that traditional archaeological testing methods would cause far more subsurface disturbance than simply allowing the project to proceed. The City and the DAHP concurred with Chris's recommendation to proceed without cultural resources fieldwork.

King County WTD, On-Call Archaeological & Historical Services, King County, WA. *Geoarchaeologist.*

- Chris served as project lead for multiple, concurrent task orders under the WTD on-call. Chris is currently preparing an application for an archaeological Excavation Permit in advance of construction for the new Influent Screenings Building at the West Point Treatment Plant.
- For the West Point Waste-to-Energy Project, Chris supervised archaeological monitoring of multiple phases of the construction work, and performed a comprehensive geoarchaeological review to synthesize geotechnical data, previous archaeology, and construction plans to assess risks for encountering cultural resources.

Relevant Experience (Continued)

- Chris conducted a pre-construction geotechnical review to assess risks for encountering cultural resources and supervised cultural resources monitoring during construction for the West Point Office Annex Project.

  On-Call Cultural Resources, Sound Transit, WA. ***Geoarchaeologist.*** Chris served as principal investigator for data recovery during for the Pine Street Stub Tunnel Project. He coordinated archival research and artifact analysis by a multidisciplinary team of specialists and synthesized results into a comprehensive project report. Chris also responded to inadvertent discoveries and led cultural resource trainings for construction crews.

  Sound Transit Light Rail Capitol Hill Station, Seattle WA. ***Geoarchaeologist.*** Chris oversaw construction monitoring and archaeological data recovery of a deep historic site in downtown Seattle. Chris's coordination efforts resulted in no construction delays.

Appendix B

SCIC Records Search Results
(Confidential, Bound Separately)

Appendix C
Native American Correspondence

626 Wilshire Blvd
Suite 1100
Los Angeles, CA 90017
213.559.4300 phone
213.559.4301 fax

www.esassoc.com

February 26, 2015

Native American Heritage Commission
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
FAX- 916-373-5471

Subject: **SLF search request for the Escondido MFRO Facility for Agriculture Project – D140480.00**

Dear NAHC:

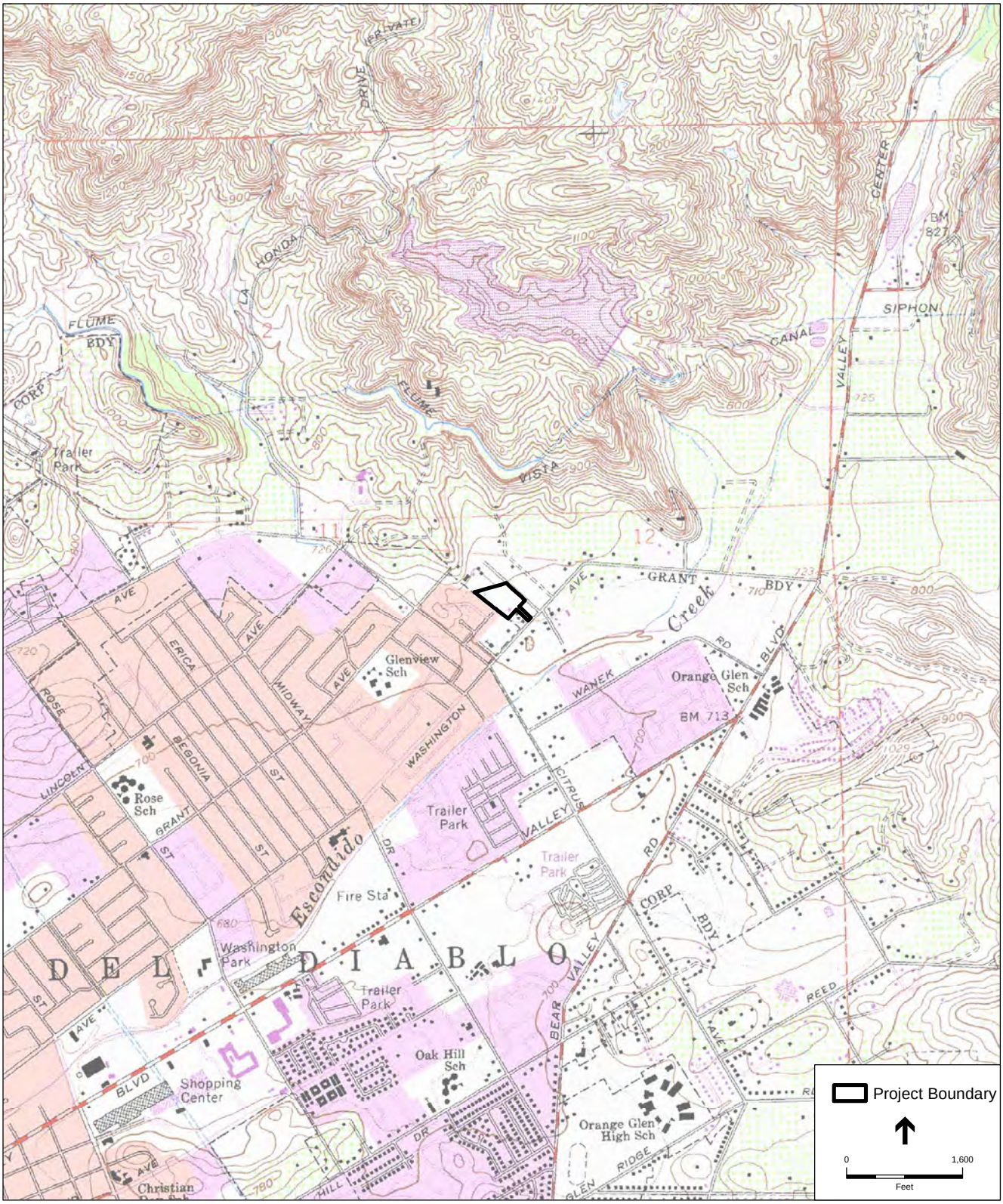
ESA is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the microfiltration reverse osmosis (MFRO) Facility for Agriculture Project (project). In support of the IS/MND, ESA will complete a Phase I Cultural Resources Study for the 3.23-acre project area. The project would include the construction of a reverse osmosis facility where a portion of non-potable reuse water would be sent through RO membranes to reduce salinity/chlorides in the water. The RO water will be blended and sent to growers. The project site is located northwest of East Washington Avenue between North Citrus Avenue and East El Norte Parkway in the City of Escondido. The enclosed map shows the project site located in an unsectioned portion of the Valley Center USGS 7.5' Quad, Township 12 South/Range 2 West (see enclosed map).

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA is requesting that a Sacred Lands File search be conducted for sacred lands or traditional cultural properties that may exist within the project area. We additionally request the names and contact information for Native American representatives who are associated with the project area so that we may provide these individuals with information regarding the project.

Thank you for your time and cooperation regarding this matter. To expedite the delivery of search results, please email them to aabdelwahed@esassoc.com . Please contact me at 213.559.4300 ext. 3562 or via email if you have any questions.

Sincerely,

Arabesque Said-Abdelwahed, MPP
Senior Associate
Community Development



TOPOQUAD: Valley Center

City of Escondido MFRO Facility. 140480

Figure 1

Cultural Record Search

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

March 23, 2015

Arabesque Said-Abdelwahed
ESA/Community Development
626 Wilshire Blvd., Suite 1100
Los Angeles, CA 90017

Sent by Fax: (213) 599-4301
Number of Pages: 4

Re: Escondido MFRO Facility for Agriculture Project-D140480.00, San Diego County.

Dear Mr. Said-Abdelwahed,

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) for the project referenced above. The search indicates the potential of Native American cultural resources in the Valley Center Quadrangle that may be impacted. For specific information regarding this site, please contact the Rincon Band of Mission Indians and the San Pasqual Band of Mission Indians on the attached *Native American Contact List.*

The absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE. Other sources of cultural resources information should be contacted regarding known and recorded sites. Please contact all of the people on the attached *Native American Contact List.* The list should provide a starting place to locate areas of potential adverse impact within the APE. I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: Katy.Sanchez@nahc.ca.gov.

Sincerely,

Katy Sanchez

Katy Sanchez
Associate Government Program Analyst

Native American Contact List
San Diego County
March 19, 2015

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 Luiseno
Temecula , CA 92593
mgoodhart@pechanga-nsn.
(951) 770-6100

(951) 695-1778 Fax

Pauma & Yuima Reservation
Charles Devers, Cultural Committee
P.O. Box 369 Luiseno
Pauma Valley CA 92061
(760) 742-1289

(760) 742-3422 Fax

La Jolla Band of Mission Indians
Lavonne Peck, Chairwoman
22000 Highway 76 Luiseno
Pauma Valley CA 92061
Rob.roy@lajolla-nsn.gov
(760) 742-3771

(760) 742-1704 Fax

Inter-Tribal Cultural Resource Protection Council
Frank Brown, Coordinator
240 Brown Road Diegueno/Kumeyaay
Alpine , CA 91901
frbrown@viejas-nsn.gov
(619) 884-6437

Iipay Nation of Santa Ysabel
Clint Linton, Director of Cultural Resources
P.O. Box 507 Diegueno/Kumeyaay
Santa Ysabel, CA 92070
cjlinton73@aol.com
(760) 803-5694

Iipay Nation of Santa Ysabel
Virgil Perez, Chairperson
P.O. Box 130 Diegueno/Kumeyaay
Santa Ysabel, CA 92070
(760) 765-0845

(760) 765-0320 Fax

Iipay Nation of Santa Ysabel
Rodney Kephart, Environmental Coordinator
PO Box 130 Diegueno
Santa Ysabel, CA 92070
syirod@aol.com
(760) 765-0845

Pala Band of Mission Indians
Robert H. Smith, Chairperson
PMB 50, 35008 Pala-Temecula Luiseno
Pala , CA 92059 Cupeno
dhuss@palatribe.com
(760) 891-3500

(760) 742-3189 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed Escondido MFRO Facility for Agriculture Project-D140480.00, San Diego County.

Native American Contact List
San Diego County
March 19, 2015

Inaja Band of Mission Indians
Rebecca Osuna, Chairman
2005 S. Escondido Blvd. Diegueno
Escondido , CA 92025
(760) 737-7628

(760) 747-8568 Fax

Pauma Valley Band of Luiseño Indians
Bennae Calac
P.O. Box 369 Luiseno
Pauma Valley, CA 92061
bennaecalac@aol.com
(760) 617-2872

(760) 742-3422 Fax

Pauma & Yuima
ATTN: EPA
P.O. Box 369 Luiseno
Pauma Valley, CA 92061
kymberli_peters@yahoo.com
(760) 742-1289

(760) 742-3422 Fax

Barona Group of the Capitan Grande
ATTN: Sheilla Alvarez
1095 Barona Road Diegueno
Lakeside , CA 92040
salvarez@barona-nsn.gov
(619) 443-6612

Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
1 West Tribal Road Luiseno
Valley Center, CA 92082
bomazzetti@aol.com
(760) 749-1051

(760) 749-8901 Fax

San Pasqual Band of Indians
Kristie Orosco, Environmental Coordinator
P.O. Box 365 Diegueno
Valley Center, CA 92082
council@sanpasqualtribe.org
(760) 749-3200

(760) 749-3876 Fax

San Luis Rey Band of Mission Indians
Tribal Council
1889 Sunset Drive Luiseno
Vista , CA 92081
cjmojado@slrmissionindians.org
(760) 724-8505

(760) 724-2172 Fax

San Luis Rey Band of Mission Indians
Cultural Department
1889 Sunset Drive Luiseno
Vista , CA 92081 Cupeno
cjmojado@slrmissionindians.org
(760) 724-8505

(760) 724-2172 Fax

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This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed Escondido MFRO Facility for Agriculture Project-D140480.00, San Diego County.

Native American Contact List
San Diego County
March 19, 2015

Barona Group of the Capitan Grande
Clifford LaChappa, Chairperson
1095 Barona Road Diegueno
Lakeside , CA 92040
counciloffice@barona-nsn.gov
(619) 443-6612
(6190 443-0681

Pauma & Yuima Reservation
Randall Majel, Chairperson
P.O. Box 369 Luiseno
Pauma Valley CA 92061
(760) 742-1289 ext 317

(760) 742-3422 Fax

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
P.O. Box 365 Diegueno
Valley Center, CA 92082
allenl@sanpasqualtribe.org
(760) 749-3200

(760) 749-3876 Fax

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resources Manager
P.O. Box 1477 Luiseno
Temecula , CA 92593
pmacarro@pechanga-nsn.gov
(951) 770-8100

(951) 506-9491 Fax

Mesa Grande Band of Mission Indians
Mark Romero, Chairperson
P.O Box 270 Diegueno
Santa Ysabel, CA 92070
mesagrandeband@msn.com
(760) 782-3818

(760) 782-9092 Fax

Rincon Band of Mission Indians
Vincent Whipple, Tribal Historic Pres. Officer
1 West Tribal Road Luiseno
Valley Center, CA 92082
vwhipple@rincontribe.org
(760) 297-2635

(760) 297-2639 Fax

Pala Band of Mission Indians
Shasta Gaughen, PhD, THPO
PMB 50, 35008 Pala-Temecula Luiseno
Pala , CA 92059 Cupeno
sgaughen@palatribe.com
(760) 891-3515

(760) 742-3189 Fax

Soboba Band of Mission Indians
Rosemary Morillo, Chairperson; Attn: Carrie Garcia
P.O. Box 487 Luiseno
San Jacinto , CA 92581
carrieg@soboba-nsn.gov
(951) 654-2765

(951) 654-4198 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed Escondido MFRO Facility for Agriculture Project-D140480.00, San Diego County.

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

www.esassoc.com

April 16, 2015

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
P.O. Box 365
Valley Center, CA 92082

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Lawson:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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Sincerely,

Michael Vader
Cultural Resources

Attachment 1: APE Map

ESA

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

www.esassoc.com

April 16, 2015

Pauma Valley Band of Luiseño Indians
Bennae Calac
P.O. Box 369
Pauma Valley, CA 92061

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Calac:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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April 16, 2015

Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
1 West Tribal Road
Valley Center, CA 92082

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Mazzetti:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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April 16, 2015

Pauma and Yuima Reservation
Charles Devers, Cultural Committee
P.O. Box 369
Pauma Valley, CA 92061

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Devers:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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April 16, 2015

Barona Group of the Capitan Grande
Clifford LaChappa, Chairperson
1095 Barona Road
Lakeside, CA 92040

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. LaChappa:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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April 16, 2015

Iipay Nation of Santa Ysabel
Clint Linton, Director of Cultural Resources
P.O. Box 507
Santa Ysabel, CA 92070

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Linton:

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Cultural Resources

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April 16, 2015

Inter-Tribal Cultural Resource Protection Council
Frank Brown, Coordinator
240 Brown Road
Alpine, CA 91901

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Brown:

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April 16, 2015

San Pasqual Band of Mission Indians
Kristie Orosco, Environmental Coordinator
P.O. Box 365
Valley Center, CA 92082

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Orosco:

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April 16, 2015

La Jolla Band of Mission Indians
Lavonne Peck, Chairwoman
22000 Highway 76
Pauma Valley, CA 92061

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Peck:

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April 16, 2015

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477
Temecula, CA 92593

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Macarro:

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Sincerely,

Michael Vader
Cultural Resources

Attachment 1: APE Map

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

www.esassoc.com

April 16, 2015

Mesa Grande Band of Mission Indians
Mark Romero, Chairperson
P.O. Box 270
Santa Ysabel, CA 92070

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Romero:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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April 16, 2015

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resources Manager
P.O. Box 1477
Temecula, CA 92593

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Macarro:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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April 16, 2015

Pauma and Yuima Reservation
ATTN: EPA
P.O. Box 369
Pauma Valley, CA 92061

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

To whom it may concern:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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April 16, 2015

Iipay Nation of Santa Ysabel
Rodney Kephart, Environmental Coordinator
P.O. Box 130
Santa Ysabel, CA 92070

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Kephart:

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April 16, 2015

Pauma and Yuima Reservation
Randall Majel, Chairperson
P.O. Box 369
Pauma Valley, CA 92061

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

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April 16, 2015

Soboba Band of Mission Indians
Rosemary Morillo, Chairperson;
ATTN: Carrie Garcia
P.O. Box 487
San Jacinto, CA 92581

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Morillo:

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April 16, 2015

Inaja Band of Mission Indians
Rebecca Osuna, Chairperson
2005 S. Escondido Blvd.
Escondido, CA 92025

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Osuna:

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April 16, 2015

Pala Band of Mission Indians
Robert H. Smith, Chairperson
PMB 50, 35008 Pala-Temecula
Pala, CA 92059

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Smith:

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April 16, 2015

Barona Group of the Capitan Grande
ATTN: Sheilla Alvarez
1095 Barona Road
Lakeside, CA 92040

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Alvarez:

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Sincerely,

Michael Vader
Cultural Resources

Attachment 1: APE Map

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

www.esassoc.com

April 16, 2015

Pala Band of Mission Indians
Shasta Gaughen, PhD, Tribal Historic Preservation Officer
PMB 50, 35008 Pala-Temecula
Pala, CA 92059

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Gaughen:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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Cultural Resources

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April 16, 2015

San Luis Rey Band of Mission Indians
Cultural Department
1889 Sunset Drive
Vista, CA 92081

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

To whom it may concern:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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Michael Vader
Cultural Resources

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ESA

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San Diego, CA 92101
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April 16, 2015

San Luis Rey Band of Mission Indians
Tribal Council
1889 Sunset Drive
Vista, CA 92081

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

To whom it may concern:

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April 16, 2015

Iipay Nation of Santa Ysabel
Virgil Perez, Chairperson
P.O. Box 130
Santa Ysabel, CA 92070

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Perez:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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619.719.4200 phone
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April 16, 2015

Rincon Band of Mission Indians
Vincent Whipple, Tribal Historic Preservation Officer
1 West Tribal Road
Valley Center, CA 92082

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Whipple:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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Sincerely,

Michael Vader
Cultural Resources

Attachment 1: APE Map

ESA

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

www.esassoc.com

May 5, 2015

San Pasqual Band of Mission Indians
John Flores, Environmental Coordinator
P.O. Box 365
Valley Center, CA 92082

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Flores:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project (Project). The proposed Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA). The EPA established a process, known as "CEQA-Plus," for SWRCB to administer the SRF Loan Program in compliance with federal statutes. The CEQA-Plus guidelines require the applicant (in this case the City) to consult with Native American representatives in the community that may have an interest in the Project. Based on a contact list provided by the Native American Heritage Commission (NAHC) on March 23, 2015, you have been identified as a Native American representative affiliated with the Area of Potential Effects (APE). This letter serves to invite you to consult with the City regarding the aforementioned Project.

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Sincerely,

Michael Vader
Cultural Resources

Attachment 1: APE Map

Michael Vader

From: Cultural <Cultural@pauma-nsn.gov>
Sent: Tuesday, April 21, 2015 11:42 AM
To: Michael Vader
Cc: Jpetrek@ci.escondido.ca.us; pdixon@palomar.edu; Jeremy Zagarella
Subject: Escondido MFRO Facility

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Mr. Vader,

The Pauma Band of Luiseno Indians has received your April 16 letter on the Escondido MFRO Facility. We are unaware of any specific cultural sites or resources on the proposed project property. We are also unaware of any cultural studies completed on the property. Your letter mentioned that cultural resources have been previously recorded within a ½ mile radius of the project. With cultural resources nearby, there is always a chance of cultural resources being buried below the existing surface or removed and replaced during the development in that area. We request that all ground disturbance be monitored by an archaeologist and Native monitor. We would also like to be copied on any cultural studies to review and comment on. Please keep us informed on the progression of the project. if there are any questions please contact us.

Thank you,

Mr. Chris Devers
Cultural Clerk
Pauma Band of Luiseno Indians

PALA TRIBAL HISTORIC PRESERVATION OFFICE

PMB 50, 35008 Pala Temecula Road
Pala, CA 92059
760-891-3510 Office | 760-742-3189 Fax

PALA THPO

April 23, 2015

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

Re: Escondido MFRO Facility for Agriculture Project- D140480.00.

Dear Mr. Vader:

The Pala Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of Robert Smith, Tribal Chairman.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognized Pala Indian Reservation. The project is also beyond the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). It is, however, situated in close proximity to the Reservation and information generated would likely be useful in better understanding regional culture and history. Therefore, we request as a courtesy to be kept in the information loop as the project progresses and would appreciate being maintained on the receiving list for project updates, reports of investigations, and/or any documentation that might be generated regarding previously reported or newly discovered sites. Further, if the project boundaries are modified to extend beyond the currently proposed limits, we do request updated information and the opportunity to respond to your changes.

Finally, we recommend that Approved Cultural Monitors be present on-site during all survey and all ground-disturbing activities. If you do not have access to an Approved Cultural Resource Monitor, contact us and we will work with you to identify appropriately trained individuals.

We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact me by telephone at 760-891-3515 or by e-mail at sgaughen@palatribe.com.

Sincerely,

Shasta C. Gaughen, Ph.D
Tribal Historic Preservation Officer
Pala Band of Mission Indians

From: Carmen Mojado
To: Michael Vader
Subject: Escondido MFRO Facility for Agriculture- D140-480.00
Date: Thursday, April 30, 2015 3:13:25 PM

Hi Michael,

Nice talking to you the other day. At this time San Luis Rey is requesting more information for the project to help out with our comments that we will be submitting. Can you please email any culture reports/ sacred lands search that may have been done for the project.

Any questions please feel free to contact me.

Thank you for your time,

Cami Mojado

RINCON BAND OF LUISEÑO INDIANS

Culture Committee

1 W. Tribal Road · Valley Center, California 92082 ·
(760) 297-2621 or·(760) 297-2622 & Fax:(760) 749-8901

April 2, 2015

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

Re: Escondido MFRO Facility for Agriculture Project No. D140480.00

Dear Mr. Vader:

This letter is written on behalf of the Rincon Band of Luiseño Indians. We have received your notification dated April 16, 2015, and we thank you for the consultation on Escondido MFRO Facility for Agriculture Project No. D140480.00. The location you have identified is within the Aboriginal Territory of the Luiseño people, and is also within Rincon's historic boundaries.

Embedded in the Luiseño Territory are Rincon's history, culture and identity. The project is in our Traditional Use Area and we believe there is as potential for culture findings including the possibility of human remains and associated artifacts, all culturally associated findings are culturally significant to the Rincon people.

We are not opposed to the project. We would like to request that the Rincon Cultural Resources Department be afforded the opportunity to provide the Native American Monitor for this project.

If there are any questions please do not hesitate to contact our office at (760) 297-2635.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Rose Duro
Chairman
Rincon Culture Resources Department

Bo Mazzetti, Tribal Chairman | Stephanie Spencer, Vice Chairwoman | Steve Stallings, Council Member | Laurie E. Gonzalez, Council Member | Alfonso Kolb, Council Member

Escondido MFRO Facility for Agriculture Project (D140480)
Native American Contact Log

Individual Contacted/Affiliation	Number/Email	Certified Letter Sent	Response	Follow-up Phone Call
Mark Macarro, Chairperson, Pechanga Band of Mission Indians	(951) 770-6100	4/16/2015	No repsonse.	4/23/2015 at 4:50pm
Chris Devers, Cultural Committee, Pauma and Yuima Reservation	(760) 742-1289	4/16/2015	Email response received on 4/21/2015. Mr. Devers responded that they were unaware of any specific cultural sites or resources on the proposed project property, but requested archaeolgical and Native monitoring, as well as copies of cultural studies and project updates.	4/27/2015 at 10:10am
Lavonne Peck, Chairwoman, La Jolla Band of Mission Indians	(760) 7 42-3771	4/16/2015	No repsonse.	4/27/2015 at 10:25am
Frank Brown, Coordinator, Inter-Tribal Cultural Resource Protection Council	(619) 884-6437	4/16/2015	No repsonse.	4/27/2015 at 10:37am
Clint Linton, Director of Cultural Resources, Iipay Nation of Santa Ysabel	(760) 803-5694	4/16/2015	No repsonse.	4/27/2015 at 10:45am
Virgil Perez, Chairperson, Iipay Nation of Santa Ysabel	(760) 765-0845	4/16/2015	No repsonse.	4/27/2015 at 10:59am
Rodney Kephart, Environmental Coordinator, Iipay Nation of Santa Ysabel	(760) 765-0845	4/16/2015	No repsonse.	4/27/2015 at 10:59am
Robert H. Smith, Chairperson, Pala Band of Mission Indians	(760) 891-3500	4/16/2015	No repsonse.	4/27/2015 at 11:18am
Rebecca Osuna, Chairperson, Inaja Band of Mission Indians	(760) 737-7628	4/16/2015	No repsonse.	4/27/2015 at 11:35am
Bo Mazzetti, Chairperson, Rincon Band of Mission Indians	(760) 749-1051	4/16/2015	No repsonse.	4/27/2015 at 11:39am
Bennae Calac, Pauma Valley Band of Luiseno Indians	(760) 617-2872	4/16/2015	No repsonse.	4/27/2015 at 11:39am

Escondido MFRO Facility for Agriculture Project (D140480)
Native American Contact Log

Individual Contacted/Affiliation	Response	Notes	Action Item
Mark Macarro, Chairperson, Pechanga Band of Mission Indians	Directed to Kelsey Stricker, Environmental Director of the Pechanga Environmental Department. Described the project to Ms. Stricker and asked if the Pechanga could provide any additional information regarding Native American cultural resources within the APE, and if they had any question or concerns about the project. Ms. Stricker stated that she would inform the Pechanga Cultural Resources center that ESA called regarding the project. No response to date.	-	-
Chris Devers, Cultural Committee, Pauma and Yuima Reservation	Mr. Devers re-iterated that Project-related ground disturbance be monitored.	-	Send copy of final report and add Mr. Devers to distribution list.
Lavonne Peck, Chairwoman, La Jolla Band of Mission Indians	Left a message with the tribal adminstration describing the Project and soliciting input from Tom Rodriguez, the current tribal chairperson. No response to date.	-	-
Frank Brown, Coordinator, Inter-Tribal Cultural Resource Protection Council	Left voicemail. No response to date.	-	-
Clint Linton, Director of Cultural Resources, Iipay Nation of Santa Ysabel	Left voicemail. No response to date.	-	-
Virgil Perez, Chairperson, Iipay Nation of Santa Ysabel	Left voicemail. No response to date.	-	-
Rodney Kephart, Environmental Coordinator, Iipay Nation of Santa Ysabel	Left voicemail. No response to date.	-	-
Robert H. Smith, Chairperson, Pala Band of Mission Indians	Spoke with the Tribal Historic Preservation Officer, Shasta Gaughen. Ms. Gaughen requested that she be the only point of contact for matters pertaining to cultural resources.	Direct future outreach efforts to Shasta Gaughen.	-
Rebecca Osuna, Chairperson, Inaja Band of Mission Indians	Left message with tribal adminstration receptionist. No response to date.	-	-
Bo Mazzetti, Chairperson, Rincon Band of Mission Indians	Left voicemail. No response to date.	-	-
Bennae Calac, Pauma Valley Band of Luiseno Indians	Left voicemail. No response to date.	-	-

Escondido MFRO Facility for Agriculture Project (D140480)
Native American Contact Log

Individual Contacted/Affiliation	Number/Email	Certified Letter Sent	Response	Follow-up Phone Call
Kristie Orosco, Environmental Coordinator, San Pasqual Band of Mission Indians	(760) 7 49-3200	4/16/2015	No repsonse.	4/27/2015 at 11:49am
EPA, Pauma and Yuima Reservation	(760) 742-1289	4/16/2015	No repsonse.	4/27/2015 at 11:58am
San Luis Rey Band of Mission Indians Tribal Council	(760) 724-8505	4/16/2015	No repsonse.	4/27/2015 at 12:17pm
Sheilla Alvarez, Barona Group of the Capitan Grande	(619) 443-6612	4/16/2015	No repsonse.	4/27/2015 at 12:31pm
San Luis Rey Band of Mission Indians Cultural Department	(760) 724-8505	4/16/2015	No repsonse.	4/27/2015 at 12:17pm
Clifford LaChappa, Chairperson, Barona Group of the Capitan Grande	(619) 443-6612	4/16/2015	No repsonse.	4/27/2015 at 12:31pm
Randall Majel, Chairperson, Pauma and Yuima Reservation	(760) 742-1289 ext 317	4/16/2015	No repsonse.	4/27/2015 at 12:31pm

Escondido MFRO Facility for Agriculture Project (D140480)
Native American Contact Log

Individual Contacted/Affiliation	Response	Notes	Action Item
Kristie Orosco, Environmental Coordinator, San Pasqual Band of Mission Indians	Ms. Orosco no longer works for the San Pasqual Band of Mission Indians. John Flores, the current environmental coordinator requested the contact letter be re-sent to him.	Sent letter to Mr. Flores on 5/5/2015	-
EPA, Pauma and Yuima Reservation	Unable to reach by phone (not listed in tribal office telephone directory).	-	-
San Luis Rey Band of Mission Indians Tribal Council	Spoke with Carmen Mojado of the Cultural Resources Department. Ms. Mojado stated that she would respond to the contact letter shortly and asked for a copy of the records search results.	Received email on 4/30/2015. Ms. Mojado requested copies of the cultural reports and SLF search results. SLF results sent on 4/30/2015	Send copy of final report and SCIC records search to Ms. Mojado.
Sheilla Alvarez, Barona Group of the Capitan Grande	Left voicemail. No response to date.	-	-
San Luis Rey Band of Mission Indians Cultural Department	Spoke with Carmen Mojado of the Cultural Resources Department. (see above).	-	-
Clifford LaChappa, Chairperson, Barona Group of the Capitan Grande	Left voicemail for Sheila Alvarez (see above).	-	-
Randall Majel, Chairperson, Pauma and Yuima Reservation	Unabel to reach by phone (not listed in the tribal office telephone directory).	-	-

Appendix D

DPR 523 Form

(Confidential, Bound Separately)

APPENDIX D

Greenhouse Gas Emissions Data

Escondido MFRO
Assumptions

CalEEMod Inputs that are not modeling defaults:

Project Location:	County
	San Diego
Climate Zone:	13
Operational Year:	2017
Utility Company:	San Diego Gas & Electric

Land Use Type:

Total:			Modeled as
MFRO Facility	10	KSF	General Heavy Industrial
Acerage	3.25		
Employment	2 to 3	Total	per month

CONSTRUCTION INFORMATION

The construction information was provided by the Client. However, the amount of equipment specified onsite during phases that overlap is very high for a 3.25 acre site. There is no possible way that 13 pieces of heavy equipment along with numerous pieces of minor equipment could safely operate onsite at the same time. The modeling therefore will show each individual phase together, but assumes that all the equpiment from each phase would not be operating onsite when the phase overlaps with other equipment. For example, the site preparation phase has 1 air compressor and 1 backhoe, the grading phase has one air compressor and 2 backhoes. Therefore, when these phases overlap, the maximum amount of equipment that is anticpated to operate onsite is 1 air compressor and 2 backhoes. Additionally, while a separate soil hauling phase was not included in the provided information, soil hauling during grading would only occur over 22 of the 75 days. Therefore in order to ensure the emissions for the modeling took into account the reduced hauling time, as separate soil hauling phase was modeled. In this case, emissions from the soil hauling phase will be added to the grading phase. Additionally, in order for CalEEMod to allow for the proper inputs, the grader and loader anticipated for use during the grading phase was moved to the soil hauling phase and removed from the grading equipment. In this respect, adding the emissions from the 2 phases will result in maximum daily emissions to be anticipated in the grading phase. It is likely however for the building construction, architectural coating and paving phase to overlap, however the likelihood of all the building and construction equipment being in operation at the same time as the paving and architectural coating phases is low.

The phasing in CalEEMod reports the days of construction not necessarily the specific start/end date of the phase as listed below. It is assumed that construction would occur only over the number of days anticipated however those days are not necessarily consecutive.

Escondido MFRO
Assumptions

Construction schedule based on Project specific Information

Phase	# Worker	Starte Date	End Date	# Days	Days/week
Construction Phase One - June 2016 thru March 2018					
Site Preparation	4	1/1/2016	2/1/2016	22	5
Grading/Excavation	4	1/1/2016	8/1/2016	75	5
Soil Export	N/A	9/1/2016	10/1/2016	22	5
Drainage/Utilities/Subgrade	4	2/1/2016	11/1/2016	75	5
Building Construction	30	2/1/2016	11/1/2016	220	5
Architectural Coating	5	9/1/2016	12/1/2016	60	5
Paving	7	11/1/2016	12/1/2016	22	5

Project Specific Construction information provided.

Site Preparation

Soil Export	5,000	Cubic Yards Total
	20	cubic yard truck capacity
	250	total round trip truck trips
	20	distance to disposal site (approximate)

Equipment	#	Hrs	Acres disturbed[1]	
air compressors	1	8	0	
Backhoes	1	8	0	
concrete/industrial saws	1	4	0	
compactor	1	8	0	
generator set	1	8	0	
grader	1	8	0.5	
Loaders	1	8	0	
Skid Steer Loaders	1	4	0	
Sweepers/scrubbers	1	4	0	0.5 Total

Soil Hauling (Modeled as a separate grading phase)

Soil Export	5,000	Cubic Yards Total
	20	cubic yard truck capacity
	250	total round trip truck trips
	20	distance to disposal site (approximate)

Equipment	#	Hrs	Acres disturbed[1]	
Graders	1	8	0.5	
Loaders	1	8	0	0.5 Total

* This sill occur from 9/1/2016 to 10/1/2016 and will overlap completely with grading phase. The grader and loader in this phase are needed to ensure the ability to have a materials movement entry for this phase. Therefore, they are accounted for here and not in the grading phase.

Escondido MFRO
Assumptions

Grading/Excavation

Soil Export accounted for in the Soil Hauling phase

Equipment	#	Hrs	Acres disturbed[1]	
air compressors	1	8	0	
Backhoes	2	8	0	
concrete/industrial saws	1	4	0	
compactor	1	8	0	
Excavator	1	8	0.5	
Forklifts	1	8	0	
Generator Sets	1	8	0	
Skid Steer Loaders	1	4	0	
Sweepers/scrubbers	1	4	0	0.5 Total

Drainage/Utilities/Subgrade

Equipment	#	Hrs	Acres disturbed[1]	
air compressors	1	8	0	
Backhoes	2	8	0	
Bore/Drill Rigs	1	8	0	
Compactor	1	8	0	
Crane	1	8	0	
Excavator	1	8	1	
Forklift	1	8	0	
Generator set	1	8	0	
loaders	1	8	0	
Pumps	1	4	0	
Skid Steer Loaders	1	8	0	
Sweeper/scrubber	1	4	0	
trencher	1	8	0	
Welders	1	8	0	1 Total

Building Construction

Equipment	#	Hrs	Acres disturbed[1]	
air compressors	3	8	0	
Backhoes	1	8	0	
cement mortar mixers	1	8	0	
concrete industrial saws	1	8	0	
cranes	2	8	0	
Forklift	1	8	0	
Generator set	1	8	0	
loaders	1	8	0	
Pumps	1	4	0	
Skid Steer Loaders	1	8	0	
Sweeper/scrubber	1	4	0	
Welders	1	8	0	0 Total

Escondido MFRO
Assumptions

Paving

Acres to be paved 1.25

Equipment	#	Hrs	Acres disturbed[1]	
Compactor	1	8	0	
Forklifts	1	8	0	
Graders	1	8	0.5	
loaders	1	8	0	
Pavers	1	8	0	
Paving Equipment	1	8	0	
Pumps	1	8	0	
Rollers	2	4	0	
Skid Steer Loaders	1	8	0	
Surfacing Equipment	1	8	0	
Sweepers/Scrubbers	1	4	0	0.5 Total

Architectural Coating

Equipment	#	Hrs	Acres disturbed[1]	
Air Compressor	Default	Default	0	Total

[1] - Based on SCAQMD Fact Sheet for applying CalEEMod to Localized Significance Thresholds

Escondido MFRO
Assumptions

PROJECT OPERATIONAL INFORMATION

Operational Mobile Sources

Trip Rates: Delivery and removal of chemicals would be one a month, but we could state once a week. Routine operations and maintenance employee would not be every day either likely 2-3 per month so we could also state per week. Worst case scenario would be like 4 truck trips. As a conservative estimate of truck trips we are estimating high at 10 round trips per day.

20	trips perday
0.002	trips per square foot
0.000002	trips per KSF

Energy: There is no project specific information with respect to electricity and natural gas. However as the process is electricity intensive and all of the pumps would be electric, the defaults for a "Refrigerated Warehouse" are used instead of the defaults for Heavy Industrial. This results in a conservative estimate of electrical usage by using a land use that has a known high electrical consumption rate. However, the default electrical consumption rate for lighting will be reduced to 10 percent because the design calls for natural lighting (translucent roofing panels) as well as the limited amount of time (up to 2 times per month maximum) that maintenance personell would be onsite.

Rate Change	Title 24	Non-Title 24	Lighting	
From Heavy Industrial	1.48	4.27	3.25	Kwh/KSF/year
To Refrigerated Warehouse	2.53	27.88	4.1	Kwh/KSF/year
Revised Refrigerated Warehouse			0.41	Kwh/KSF/year

With respect to natural gas, the "Refrigerated Warehouse" defaults are also used. As the building is not occupied except for a few hours per month, the consumption of natural gas would be minimal. Therefore, as the refrigerated warehouse defaults also have a been used for natural gas consumption.

Rate Change	Title 24	Non-Title 24	
From Heavy Industrial	4.54	7.25	MMBTU/KSF/year
To Refrigerated Warehouse	6.68	0.02	MMBTU/KSF/year

Water: Heavy Industrial defaults used

Solid Waste: Heavy Industrial defaults used

"Mitigation" Measures applied to make project consistent with existing regulation requirements and achievements.

Construction: To achieve SCAQMD standard dust control minimum requiremnts:
- Soil Stabilizers (61% reduction)
- Replace ground cover (5% reduction)
- Water exposed area (3x per day)
- Unpaved roads (15 mph)

Energy: 15% exceedence of Title 24 to account for the Title 24 efficiencey increase between 2008 (CalEEMod default usage) and 2013 regulations currently in effect.

Water: 20% reduction in indoor water use to account for 2013 Title 24 requirements.

Solid Waste: 50% reduction in waste disposal. Current rate achieved by California.

Escondido MFRO
GHG Summary Emissions

Unmitigate GHG Construction Emissions

	CO_2	CH_4	CH_4 (CO_2e)	N_2O	N_2O (CO_2e)	CO_2e
2016	1,082.78	0.23	5.75	0.00	0.00	1,088.53
Construction emissions:						1,088.53

Mitigation: None Required

Unmitigated GHG Emissions

	CO_2	CH_4	CH_4 (CO_2e)	N_2O	N_2O (CO_2e)	CO_2e
			MT/year Annual Unmitigated			
			Phase 1			
Area	0.000	0.000	0.000	0.000	0.000	0.00
Energy	102.523	0.004	0.102	0.001	0.262	102.89
Mobile	24.446	0.001	0.026	0.000	0.000	24.47
Waste	1.259	0.074	1.860	0.000	0.000	3.12
Water	8.186	0.061	1.515	0.001	0.444	10.15
Operational Emissions						140.62
Construction Emissions						1,088.53
Total Project Emissions						1,229.15
Brightline Threshold						2,500
Significant						**No**

Source: ESA CalEEMod modeling 2015

Mitigation: None Required

Escondido MFRO

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	10.00	1000sqft	3.30	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2017
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The Heavy Industrial is the closest land use type to the MFRO.

Construction Phase - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment -

Off-road Equipment - Based on project specific information

Grading - Based on project specific information and assumptions

Trips and VMT - Based on project specific information and 20 cubic yard trucks

Vehicle Trips - based on 20 trips max per day

Energy Use - Used refrigerated warehouse defaults as more appropriate for the project. Lighting modified to 1/10 of Refrigerated warhouse due to limited occupation.

Water And Wastewater - Defaults used

Solid Waste - Defaults used

Construction Off-road Equipment Mitigation -

Energy Mitigation - Upgrades model to account for 2013 Title 24 requirements

Water Mitigation - Updates model to account for Title 24 requirements

Waste Mitigation - Updates model to account for the reduction level achieved by the state to date

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	60.00
tblConstructionPhase	NumDays	230.00	220.00
tblConstructionPhase	NumDays	8.00	75.00
tblConstructionPhase	NumDays	18.00	22.00
tblConstructionPhase	NumDays	5.00	22.00
tblConstructionPhase	NumDays	8.00	22.00

tblConstructionPhase	NumDays	8.00	75.00
tblConstructionPhase	PhaseEndDate	8/23/2016	11/23/2016
tblConstructionPhase	PhaseEndDate	3/17/2017	12/2/2016
tblConstructionPhase	PhaseEndDate	5/16/2016	4/14/2016
tblConstructionPhase	PhaseEndDate	12/23/2016	11/30/2016
tblConstructionPhase	PhaseEndDate	1/3/2017	5/31/2016
tblConstructionPhase	PhaseEndDate	7/28/2016	5/13/2016
tblConstructionPhase	PhaseStartDate	6/1/2016	9/1/2016
tblConstructionPhase	PhaseStartDate	5/14/2016	2/1/2016
tblConstructionPhase	PhaseStartDate	2/2/2016	1/1/2016
tblConstructionPhase	PhaseStartDate	11/24/2016	11/1/2016
tblConstructionPhase	PhaseStartDate	12/3/2016	5/1/2016
tblConstructionPhase	PhaseStartDate	4/15/2016	2/1/2016
tblEnergyUse	LightingElect	3.25	0.41
tblEnergyUse	NT24E	4.27	27.88
tblEnergyUse	NT24NG	7.25	0.02
tblEnergyUse	T24E	1.48	2.53
tblEnergyUse	T24NG	4.54	6.68
tblGrading	MaterialExported	0.00	5,000.00
tblGrading	MaterialExported	0.00	5,000.00
tblLandUse	LotAcreage	0.23	3.30
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.37	0.37

tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.30	0.30
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors

tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	HaulingTripNumber	625.00	500.00
tblTripsAndVMT	HaulingTripNumber	625.00	500.00
tblTripsAndVMT	WorkerTripNumber	30.00	23.00
tblTripsAndVMT	WorkerTripNumber	30.00	25.00
tblTripsAndVMT	WorkerTripNumber	35.00	30.00
tblTripsAndVMT	WorkerTripNumber	43.00	38.00
tblTripsAndVMT	WorkerTripNumber	10.00	5.00
tblVehicleTrips	ST_TR	1.50	2.00
tblVehicleTrips	SU_TR	1.50	2.00
tblVehicleTrips	WD_TR	1.50	2.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.4747	11.9245	8.1096	0.0121	0.8066	0.7438	1.5504	0.4097	0.7069	1.1166	0.0000	1,082.7813	1,082.7813	0.2300	0.0000	1,087.6116
Total	**1.4747**	**11.9245**	**8.1096**	**0.0121**	**0.8066**	**0.7438**	**1.5504**	**0.4097**	**0.7069**	**1.1166**	**0.0000**	**1,082.7813**	**1,082.7813**	**0.2300**	**0.0000**	**1,087.6116**

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					
2016	1.4746	11.9244	8.1096	0.0121	0.8066	0.7438	1.5504	0.4097	0.7069	1.1166	0.0000	1,082.7801	1,082.7801	0.2300	0.0000	1,087.6104
Total	**1.4746**	**11.9244**	**8.1096**	**0.0121**	**0.8066**	**0.7438**	**1.5504**	**0.4097**	**0.7069**	**1.1166**	**0.0000**	**1,082.7801**	**1,082.7801**	**0.2300**	**0.0000**	**1,087.6104**

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

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	0.0507	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Energy	3.6000e-004	3.2800e-003	2.7600e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	104.2978	104.2978	4.1200e-003	9.0000e-004	104.6648
Mobile	0.0131	0.0317	0.1404	3.2000e-004	0.0220	4.0000e-004	0.0224	5.8700e-003	3.7000e-004	6.2400e-003	0.0000	24.4457	24.4457	1.0200e-003	0.0000	24.4671
Waste						0.0000	0.0000		0.0000	0.0000	2.5171	0.0000	2.5171	0.1488	0.0000	5.6410
Water						0.0000	0.0000		0.0000	0.0000	0.7337	9.8406	10.5742	0.0758	1.8600e-003	12.7419
Total	**0.0641**	**0.0350**	**0.1432**	**3.4000e-004**	**0.0220**	**6.5000e-004**	**0.0226**	**5.8700e-003**	**6.2000e-004**	**6.4900e-003**	**3.2507**	**138.5843**	**141.8350**	**0.2297**	**2.7600e-003**	**147.5149**

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	0.0507	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Energy	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	102.5229	102.5229	4.0600e-003	8.8000e-004	102.8823
Mobile	0.0131	0.0317	0.1404	3.2000e-004	0.0220	4.0000e-004	0.0224	5.8700e-003	3.7000e-004	6.2400e-003	0.0000	24.4457	24.4457	1.0200e-003	0.0000	24.4671
Waste						0.0000	0.0000		0.0000	0.0000	1.2585	0.0000	1.2585	0.0744	0.0000	2.8205
Water						0.0000	0.0000		0.0000	0.0000	0.5869	7.5992	8.1861	0.0606	1.4900e-003	9.9194
Total	**0.0640**	**0.0345**	**0.1428**	**3.4000e-004**	**0.0220**	**6.1000e-004**	**0.0226**	**5.8700e-003**	**5.8000e-004**	**6.4500e-003**	**1.8455**	**134.5680**	**136.4135**	**0.1401**	**2.3700e-003**	**140.0894**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.08**	**1.40**	**0.29**	**0.00**	**0.00**	**6.15**	**0.18**	**0.00**	**6.45**	**0.62**	**43.23**	**2.90**	**3.82**	**39.02**	**14.13**	**5.03**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2016	2/1/2016	5	22	
2	Grading	Grading	1/1/2016	4/14/2016	5	75	
3	Drainage/Utilities/Subgrade	Grading	2/1/2016	5/13/2016	5	75	
4	Building Construction	Building Construction	2/1/2016	12/2/2016	5	220	
5	Soil Hauling	Grading	5/1/2016	5/31/2016	5	22	
6	Architectural Coating	Architectural Coating	9/1/2016	11/23/2016	5	60	
7	Paving	Paving	11/1/2016	11/30/2016	5	22	

Acres of Grading (Site Preparation Phase): 11

Acres of Grading (Grading Phase): 37.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 15,000; Non-Residential Outdoor: 5,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Skid Steer Loaders	1	8.00	64	0.37
Paving	Sweepers/Scrubbers	1	4.00	64	0.46
Paving	Surfacing Equipment	1	8.00	253	0.30
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Soil Hauling	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Drainage/Utilities/Subgrade	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Drainage/Utilities/Subgrade	Rubber Tired Dozers	1	8.00	255	0.40
Soil Hauling	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40

Architectural Coating	Air Compressors	1	6.00	78	0.48
Drainage/Utilities/Subgrade	Excavators	1	8.00	162	0.38
Paving	Plate Compactors	1	8.00	8	0.43
Building Construction	Cranes	2	7.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Grading	Excavators	1	8.00	162	0.38
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	4.00	80	0.38
Building Construction	Air Compressors	3	8.00	78	0.48
Drainage/Utilities/Subgrade	Air Compressors	1	8.00	78	0.48
Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Drainage/Utilities/Subgrade	Bore/Drill Rigs	1	8.00	205	0.50
Paving	Paving Equipment	1	6.00	130	0.36
Grading	Air Compressors	1	8.00	78	0.48
Building Construction	Welders	1	8.00	46	0.45
Soil Hauling	Graders	1	8.00	174	0.41
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Forklifts	1	8.00	89	0.20
Drainage/Utilities/Subgrade	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Soil Hauling	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Air Compressors	1	8.00	78	0.48
Site Preparation	Concrete/Industrial Saws	1	4.00	81	0.73
Site Preparation	Plate Compactors	1	8.00	8	0.43
Site Preparation	Generator Sets	1	8.00	84	0.74

Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Skid Steer Loaders	1	4.00	64	0.37
Site Preparation	Sweepers/Scrubbers	1	4.00	64	0.46
Grading	Concrete/Industrial Saws	1	4.00	81	0.73
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Forklifts	1	8.00	89	0.20
Grading	Generator Sets	1	8.00	84	0.74
Grading	Skid Steer Loaders	1	4.00	64	0.37
Grading	Sweepers/Scrubbers	1	4.00	64	0.46
Drainage/Utilities/Subgrade	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Subgrade	Cranes	1	8.00	226	0.29
Drainage/Utilities/Subgrade	Forklifts	1	8.00	89	0.20
Drainage/Utilities/Subgrade	Generator Sets	1	8.00	84	0.74
Drainage/Utilities/Subgrade	Pumps	1	4.00	84	0.74
Drainage/Utilities/Subgrade	Skid Steer Loaders	1	8.00	64	0.37
Drainage/Utilities/Subgrade	Sweepers/Scrubbers	1	4.00	64	0.46
Drainage/Utilities/Subgrade	Trenchers	1	8.00	80	0.50
Drainage/Utilities/Subgrade	Welders	1	8.00	46	0.45
Building Construction	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Pumps	1	4.00	84	0.74
Building Construction	Skid Steer Loaders	1	8.00	64	0.37
Building Construction	Sweepers/Scrubbers	1	4.00	64	0.46
Paving	Graders	1	8.00	174	0.41
Paving	Pumps	1	8.00	84	0.74

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
Drainage/Utilities/Subgrade	17	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	12	23.00	0.00	500.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	12	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	4.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	14	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Soil Hauling	4	5.00	0.00	500.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2049	0.0000	0.2049	0.1099	0.0000	0.1099	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0788	0.7857	0.5648	6.1000e-004		0.0439	0.0439		0.0411	0.0411	0.0000	56.1832	56.1832	0.0143	0.0000	56.4830
Total	**0.0788**	**0.7857**	**0.5648**	**6.1000e-004**	**0.2049**	**0.0439**	**0.2488**	**0.1099**	**0.0411**	**0.1510**	**0.0000**	**56.1832**	**56.1832**	**0.0143**	**0.0000**	**56.4830**

3.2 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2300e-003	0.0726	0.0598	1.9000e-004	4.2700e-003	9.6000e-004	5.2200e-003	1.1700e-003	8.8000e-004	2.0500e-003	0.0000	17.0763	17.0763	1.2000e-004	0.0000	17.0789
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	1.1500e-003	0.0109	2.0000e-005	2.0300e-003	2.0000e-005	2.0400e-003	5.4000e-004	1.0000e-005	5.5000e-004	0.0000	1.8907	1.8907	1.0000e-004	0.0000	1.8928
Total	**6.1000e-003**	**0.0737**	**0.0707**	**2.1000e-004**	**6.3000e-003**	**9.8000e-004**	**7.2600e-003**	**1.7100e-003**	**8.9000e-004**	**2.6000e-003**	**0.0000**	**18.9670**	**18.9670**	**2.2000e-004**	**0.0000**	**18.9716**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2049	0.0000	0.2049	0.1099	0.0000	0.1099	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0788	0.7857	0.5648	6.1000e-004		0.0439	0.0439		0.0411	0.0411	0.0000	56.1831	56.1831	0.0143	0.0000	56.4830
Total	**0.0788**	**0.7857**	**0.5648**	**6.1000e-004**	**0.2049**	**0.0439**	**0.2488**	**0.1099**	**0.0411**	**0.1510**	**0.0000**	**56.1831**	**56.1831**	**0.0143**	**0.0000**	**56.4830**

3.2 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2300e-003	0.0726	0.0598	1.9000e-004	4.2700e-003	9.6000e-004	5.2200e-003	1.1700e-003	8.8000e-004	2.0500e-003	0.0000	17.0763	17.0763	1.2000e-004	0.0000	17.0789
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	1.1500e-003	0.0109	2.0000e-005	2.0300e-003	2.0000e-005	2.0400e-003	5.4000e-004	1.0000e-005	5.5000e-004	0.0000	1.8907	1.8907	1.0000e-004	0.0000	1.8928
Total	**6.1000e-003**	**0.0737**	**0.0707**	**2.1000e-004**	**6.3000e-003**	**9.8000e-004**	**7.2600e-003**	**1.7100e-003**	**8.9000e-004**	**2.6000e-003**	**0.0000**	**18.9670**	**18.9670**	**2.2000e-004**	**0.0000**	**18.9716**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2457	0.0000	0.2457	0.1263	0.0000	0.1263	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1990	1.8791	1.3157	1.6700e-003		0.1157	0.1157		0.1088	0.1088	0.0000	152.9089	152.9089	0.0370	0.0000	153.6864
Total	**0.1990**	**1.8791**	**1.3157**	**1.6700e-003**	**0.2457**	**0.1157**	**0.3614**	**0.1263**	**0.1088**	**0.2350**	**0.0000**	**152.9089**	**152.9089**	**0.0370**	**0.0000**	**153.6864**

3.3 Grading - 2016

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	3.2200e-003	4.2500e-003	0.0405	9.0000e-005	7.5200e-003	6.0000e-005	7.5800e-003	2.0000e-003	5.0000e-005	2.0500e-003	0.0000	7.0060	7.0060	3.7000e-004	0.0000	7.0138
Total	**3.2200e-003**	**4.2500e-003**	**0.0405**	**9.0000e-005**	**7.5200e-003**	**6.0000e-005**	**7.5800e-003**	**2.0000e-003**	**5.0000e-005**	**2.0500e-003**	**0.0000**	**7.0060**	**7.0060**	**3.7000e-004**	**0.0000**	**7.0138**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2457	0.0000	0.2457	0.1263	0.0000	0.1263	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1990	1.8791	1.3157	1.6700e-003		0.1157	0.1157		0.1088	0.1088	0.0000	152.9087	152.9087	0.0370	0.0000	153.6862
Total	**0.1990**	**1.8791**	**1.3157**	**1.6700e-003**	**0.2457**	**0.1157**	**0.3614**	**0.1263**	**0.1088**	**0.2350**	**0.0000**	**152.9087**	**152.9087**	**0.0370**	**0.0000**	**153.6862**

3.3 Grading - 2016

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	3.2200e-003	4.2500e-003	0.0405	9.0000e-005	7.5200e-003	6.0000e-005	7.5800e-003	2.0000e-003	5.0000e-005	2.0500e-003	0.0000	7.0060	7.0060	3.7000e-004	0.0000	7.0138
Total	**3.2200e-003**	**4.2500e-003**	**0.0405**	**9.0000e-005**	**7.5200e-003**	**6.0000e-005**	**7.5800e-003**	**2.0000e-003**	**5.0000e-005**	**2.0500e-003**	**0.0000**	**7.0060**	**7.0060**	**3.7000e-004**	**0.0000**	**7.0138**

3.4 Drainage/Utilities/Subgrade - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2457	0.0000	0.2457	0.1263	0.0000	0.1263	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2963	2.8008	1.8020	2.6000e-003		0.1667	0.1667		0.1562	0.1562	0.0000	238.2240	238.2240	0.0622	0.0000	239.5310
Total	**0.2963**	**2.8008**	**1.8020**	**2.6000e-003**	**0.2457**	**0.1667**	**0.4124**	**0.1263**	**0.1562**	**0.2824**	**0.0000**	**238.2240**	**238.2240**	**0.0622**	**0.0000**	**239.5310**

3.4 Drainage/Utilities/Subgrade - 2016

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	4.8900e-003	6.4600e-003	0.0616	1.4000e-004	0.0114	9.0000e-005	0.0115	3.0400e-003	8.0000e-005	3.1200e-003	0.0000	10.6492	10.6492	5.6000e-004	0.0000	10.6610
Total	**4.8900e-003**	**6.4600e-003**	**0.0616**	**1.4000e-004**	**0.0114**	**9.0000e-005**	**0.0115**	**3.0400e-003**	**8.0000e-005**	**3.1200e-003**	**0.0000**	**10.6492**	**10.6492**	**5.6000e-004**	**0.0000**	**10.6610**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2457	0.0000	0.2457	0.1263	0.0000	0.1263	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2963	2.8008	1.8020	2.6000e-003		0.1667	0.1667		0.1562	0.1562	0.0000	238.2237	238.2237	0.0622	0.0000	239.5307
Total	**0.2963**	**2.8008**	**1.8020**	**2.6000e-003**	**0.2457**	**0.1667**	**0.4124**	**0.1263**	**0.1562**	**0.2824**	**0.0000**	**238.2237**	**238.2237**	**0.0622**	**0.0000**	**239.5307**

3.4 Drainage/Utilities/Subgrade - 2016

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	4.8900e-003	6.4600e-003	0.0616	1.4000e-004	0.0114	9.0000e-005	0.0115	3.0400e-003	8.0000e-005	3.1200e-003	0.0000	10.6492	10.6492	5.6000e-004	0.0000	10.6610
Total	**4.8900e-003**	**6.4600e-003**	**0.0616**	**1.4000e-004**	**0.0114**	**9.0000e-005**	**0.0115**	**3.0400e-003**	**8.0000e-005**	**3.1200e-003**	**0.0000**	**10.6492**	**10.6492**	**5.6000e-004**	**0.0000**	**10.6610**

3.5 Building Construction - 2016

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	0.6724	5.4209	3.5706	5.6500e-003		0.3647	0.3647		0.3515	0.3515	0.0000	499.2891	499.2891	0.0962	0.0000	501.3093
Total	**0.6724**	**5.4209**	**3.5706**	**5.6500e-003**		**0.3647**	**0.3647**		**0.3515**	**0.3515**	**0.0000**	**499.2891**	**499.2891**	**0.0962**	**0.0000**	**501.3093**

3.5 Building Construction - 2016

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	2.5000e-003	0.0215	0.0301	5.0000e-005	1.4300e-003	3.2000e-004	1.7500e-003	4.1000e-004	2.9000e-004	7.0000e-004	0.0000	4.7464	4.7464	4.0000e-005	0.0000	4.7472
Worker	1.5100e-003	1.9900e-003	0.0190	4.0000e-005	3.5300e-003	3.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	3.2882	3.2882	1.7000e-004	0.0000	3.2918
Total	**4.0100e-003**	**0.0235**	**0.0491**	**9.0000e-005**	**4.9600e-003**	**3.5000e-004**	**5.3100e-003**	**1.3500e-003**	**3.1000e-004**	**1.6600e-003**	**0.0000**	**8.0346**	**8.0346**	**2.1000e-004**	**0.0000**	**8.0390**

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	0.6724	5.4209	3.5706	5.6500e-003		0.3647	0.3647		0.3515	0.3515	0.0000	499.2885	499.2885	0.0962	0.0000	501.3087
Total	**0.6724**	**5.4209**	**3.5706**	**5.6500e-003**		**0.3647**	**0.3647**		**0.3515**	**0.3515**	**0.0000**	**499.2885**	**499.2885**	**0.0962**	**0.0000**	**501.3087**

3.5 Building Construction - 2016

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	2.5000e-003	0.0215	0.0301	5.0000e-005	1.4300e-003	3.2000e-004	1.7500e-003	4.1000e-004	2.9000e-004	7.0000e-004	0.0000	4.7464	4.7464	4.0000e-005	0.0000	4.7472
Worker	1.5100e-003	1.9900e-003	0.0190	4.0000e-005	3.5300e-003	3.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	3.2882	3.2882	1.7000e-004	0.0000	3.2918
Total	**4.0100e-003**	**0.0235**	**0.0491**	**9.0000e-005**	**4.9600e-003**	**3.5000e-004**	**5.3100e-003**	**1.3500e-003**	**3.1000e-004**	**1.6600e-003**	**0.0000**	**8.0346**	**8.0346**	**2.1000e-004**	**0.0000**	**8.0390**

3.6 Soil Hauling - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0724	0.0000	0.0724	0.0371	0.0000	0.0371	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0328	0.3513	0.2338	2.6000e-004		0.0187	0.0187		0.0172	0.0172	0.0000	24.4131	24.4131	7.3600e-003	0.0000	24.5677
Total	**0.0328**	**0.3513**	**0.2338**	**2.6000e-004**	**0.0724**	**0.0187**	**0.0911**	**0.0371**	**0.0172**	**0.0543**	**0.0000**	**24.4131**	**24.4131**	**7.3600e-003**	**0.0000**	**24.5677**

3.6 Soil Hauling - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2300e-003	0.0726	0.0598	1.9000e-004	4.2700e-003	9.6000e-004	5.2200e-003	1.1700e-003	8.8000e-004	2.0500e-003	0.0000	17.0763	17.0763	1.2000e-004	0.0000	17.0789
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	1.9000e-004	2.5000e-004	2.3800e-003	1.0000e-005	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4110	0.4110	2.0000e-005	0.0000	0.4115
Total	**5.4200e-003**	**0.0728**	**0.0622**	**2.0000e-004**	**4.7100e-003**	**9.6000e-004**	**5.6600e-003**	**1.2900e-003**	**8.8000e-004**	**2.1700e-003**	**0.0000**	**17.4873**	**17.4873**	**1.4000e-004**	**0.0000**	**17.4903**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0724	0.0000	0.0724	0.0371	0.0000	0.0371	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0328	0.3513	0.2338	2.6000e-004		0.0187	0.0187		0.0172	0.0172	0.0000	24.4130	24.4130	7.3600e-003	0.0000	24.5677
Total	**0.0328**	**0.3513**	**0.2338**	**2.6000e-004**	**0.0724**	**0.0187**	**0.0911**	**0.0371**	**0.0172**	**0.0543**	**0.0000**	**24.4130**	**24.4130**	**7.3600e-003**	**0.0000**	**24.5677**

3.6 Soil Hauling - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2300e-003	0.0726	0.0598	1.9000e-004	4.2700e-003	9.6000e-004	5.2200e-003	1.1700e-003	8.8000e-004	2.0500e-003	0.0000	17.0763	17.0763	1.2000e-004	0.0000	17.0789
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	1.9000e-004	2.5000e-004	2.3800e-003	1.0000e-005	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4110	0.4110	2.0000e-005	0.0000	0.4115
Total	**5.4200e-003**	**0.0728**	**0.0622**	**2.0000e-004**	**4.7100e-003**	**9.6000e-004**	**5.6600e-003**	**1.2900e-003**	**8.8000e-004**	**2.1700e-003**	**0.0000**	**17.4873**	**17.4873**	**1.4000e-004**	**0.0000**	**17.4903**

3.7 Architectural Coating - 2016

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	0.1159					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.0712	0.0565	9.0000e-005		5.9000e-003	5.9000e-003		5.9000e-003	5.9000e-003	0.0000	7.6598	7.6598	9.0000e-004	0.0000	7.6787
Total	**0.1269**	**0.0712**	**0.0565**	**9.0000e-005**		**5.9000e-003**	**5.9000e-003**		**5.9000e-003**	**5.9000e-003**	**0.0000**	**7.6598**	**7.6598**	**9.0000e-004**	**0.0000**	**7.6787**

3.7 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	1.4000e-004	1.3000e-003	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2242	0.2242	1.0000e-005	0.0000	0.2244
Total	**1.0000e-004**	**1.4000e-004**	**1.3000e-003**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2242**	**0.2242**	**1.0000e-005**	**0.0000**	**0.2244**

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	0.1159					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.0712	0.0565	9.0000e-005		5.9000e-003	5.9000e-003		5.9000e-003	5.9000e-003	0.0000	7.6598	7.6598	9.0000e-004	0.0000	7.6787
Total	**0.1269**	**0.0712**	**0.0565**	**9.0000e-005**		**5.9000e-003**	**5.9000e-003**		**5.9000e-003**	**5.9000e-003**	**0.0000**	**7.6598**	**7.6598**	**9.0000e-004**	**0.0000**	**7.6787**

3.7 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	1.4000e-004	1.3000e-003	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2242	0.2242	1.0000e-005	0.0000	0.2244
Total	**1.0000e-004**	**1.4000e-004**	**1.3000e-003**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2242**	**0.2242**	**1.0000e-005**	**0.0000**	**0.2244**

3.8 Paving - 2016

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	0.0435	0.4331	0.2667	4.3000e-004		0.0258	0.0258		0.0241	0.0241	0.0000	39.2690	39.2690	0.0104	0.0000	39.4864
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0435**	**0.4331**	**0.2667**	**4.3000e-004**		**0.0258**	**0.0258**		**0.0241**	**0.0241**	**0.0000**	**39.2690**	**39.2690**	**0.0104**	**0.0000**	**39.4864**

3.8 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	1.5000e-003	0.0143	3.0000e-005	2.6500e-003	2.0000e-005	2.6700e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.4661	2.4661	1.3000e-004	0.0000	2.4689
Total	**1.1300e-003**	**1.5000e-003**	**0.0143**	**3.0000e-005**	**2.6500e-003**	**2.0000e-005**	**2.6700e-003**	**7.0000e-004**	**2.0000e-005**	**7.2000e-004**	**0.0000**	**2.4661**	**2.4661**	**1.3000e-004**	**0.0000**	**2.4689**

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	0.0435	0.4331	0.2667	4.3000e-004		0.0258	0.0258		0.0241	0.0241	0.0000	39.2690	39.2690	0.0104	0.0000	39.4864
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0435**	**0.4331**	**0.2667**	**4.3000e-004**		**0.0258**	**0.0258**		**0.0241**	**0.0241**	**0.0000**	**39.2690**	**39.2690**	**0.0104**	**0.0000**	**39.4864**

3.8 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	1.5000e-003	0.0143	3.0000e-005	2.6500e-003	2.0000e-005	2.6700e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.4661	2.4661	1.3000e-004	0.0000	2.4689
Total	**1.1300e-003**	**1.5000e-003**	**0.0143**	**3.0000e-005**	**2.6500e-003**	**2.0000e-005**	**2.6700e-003**	**7.0000e-004**	**2.0000e-005**	**7.2000e-004**	**0.0000**	**2.4661**	**2.4661**	**1.3000e-004**	**0.0000**	**2.4689**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0131	0.0317	0.1404	3.2000e-004	0.0220	4.0000e-004	0.0224	5.8700e-003	3.7000e-004	6.2400e-003	0.0000	24.4457	24.4457	1.0200e-003	0.0000	24.4671
Unmitigated	0.0131	0.0317	0.1404	3.2000e-004	0.0220	4.0000e-004	0.0224	5.8700e-003	3.7000e-004	6.2400e-003	0.0000	24.4457	24.4457	1.0200e-003	0.0000	24.4671

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	20.00	20.00	20.00	58,390	58,390
Total	20.00	20.00	20.00	58,390	58,390

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 Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510423	0.073380	0.192408	0.132453	0.036550	0.005219	0.012745	0.022253	0.001862	0.002079	0.006550	0.000609	0.003468

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive 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	99.4822	99.4822	4.0000e-003	8.3000e-004	99.8231
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	100.7225	100.7225	4.0500e-003	8.4000e-004	101.0676
NaturalGas Mitigated	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0407	3.0407	6.0000e-005	6.0000e-005	3.0592
NaturalGas Unmitigated	3.6000e-004	3.2800e-003	2.7600e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	3.5754	3.5754	7.0000e-005	7.0000e-005	3.5971

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 Heavy Industry	67000	3.6000e-004	3.2800e-003	2.7600e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	3.5754	3.5754	7.0000e-005	7.0000e-005	3.5971
Total		**3.6000e-004**	**3.2800e-003**	**2.7600e-003**	**2.0000e-005**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**3.5754**	**3.5754**	**7.0000e-005**	**7.0000e-005**	**3.5971**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	56980	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0407	3.0407	6.0000e-005	6.0000e-005	3.0592
Total		**3.1000e-004**	**2.7900e-003**	**2.3500e-003**	**2.0000e-005**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**3.0407**	**3.0407**	**6.0000e-005**	**6.0000e-005**	**3.0592**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	308200	100.7225	4.0500e-003	8.4000e-004	101.0676
Total		**100.7225**	**4.0500e-003**	**8.4000e-004**	**101.0676**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	304405	99.4822	4.0000e-003	8.3000e-004	99.8231
Total		**99.4822**	**4.0000e-003**	**8.3000e-004**	**99.8231**

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	0.0507	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Unmitigated	0.0507	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-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	0.0116					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0391					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Total	**0.0507**	**0.0000**	**9.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-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	0.0116					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0391					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Total	**0.0507**	**0.0000**	**9.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.1861	0.0606	1.4900e-003	9.9194
Unmitigated	10.5742	0.0758	1.8600e-003	12.7419

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	2.3125 / 0	10.5742	0.0758	1.8600e-003	12.7419
Total		**10.5742**	**0.0758**	**1.8600e-003**	**12.7419**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	1.85 / 0	8.1861	0.0606	1.4900e-003	9.9194
Total		**8.1861**	**0.0606**	**1.4900e-003**	**9.9194**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.2585	0.0744	0.0000	2.8205
Unmitigated	2.5171	0.1488	0.0000	5.6410

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	12.4	2.5171	0.1488	0.0000	5.6410
Total		**2.5171**	**0.1488**	**0.0000**	**5.6410**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	6.2	1.2585	0.0744	0.0000	2.8205
Total		**1.2585**	**0.0744**	**0.0000**	**2.8205**

9.0 Operational Offroad

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

10.0 Vegetation